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GENERAL INFORMATION

1913-1914



BULLETIN OF THE UNIVERSITY OF MINNESOTA

VOL. XVI, NO. 22. SEPTEMBER 1913

Entered at the Post-Office
in Minneapolis as second-class matter
MINNEAPOLIS, MINN.

The Bulletin of the University of Minnesota is issued as often as twice a month during the University year.

The Bulletin comprises—

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1913							1914													
JULY							JANUARY							JULY						
Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa
..	..	1	2	3	4	5	..	..	..	..	1	2	3	..	..	..	1	2	3	4
6	7	8	9	10	11	12	4	5	6	7	8	9	10	5	6	7	8	9	10	11
13	14	15	16	17	18	19	11	12	13	14	15	16	17	12	13	14	15	16	17	18
20	21	22	23	24	25	26	18	19	20	21	22	23	24	19	20	21	22	23	24	25
27	28	29	30	31	25	26	27	28	29	30	31	26	27	28	29	30	31	..
..
AUGUST							FEBRUARY							AUGUST						
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3	4	5	6	7	8	9	8	9	10	11	12	13	14	2	3	4	5	6	7	8
10	11	12	13	14	15	16	15	16	17	18	19	20	21	9	10	11	12	13	14	15
17	18	19	20	21	22	23	22	23	24	25	26	27	28	16	17	18	19	20	21	22
24	25	26	27	28	29	30	..	..	..	..	..	..	..	23	24	25	26	27	28	29
31	..	..	..	..	..	..	..	..	..	..	..	..	..	30	31	..	..	..	..	..
SEPTEMBER							MARCH							SEPTEMBER						
..	1	2	3	4	5	6	1	2	3	4	5	6	7	..	..	1	2	3	4	5
7	8	9	10	11	12	13	8	9	10	11	12	13	14	6	7	8	9	10	11	12
14	15	16	17	18	19	20	15	16	17	18	19	20	21	13	14	15	16	17	18	19
21	22	23	24	25	26	27	22	23	24	25	26	27	28	20	21	22	23	24	25	26
28	29	30	..	..	..	..	29	30	31	..	..	..	..	27	28	29	30	..	..	..
..
OCTOBER							APRIL							OCTOBER						
..	..	..	1	2	3	4	..	..	..	1	2	3	4	..	..	..	..	1	2	3
5	6	7	8	9	10	11	5	6	7	8	9	10	11	4	5	6	7	8	9	10
12	13	14	15	16	17	18	12	13	14	15	16	17	18	11	12	13	14	15	16	17
19	20	21	22	23	24	25	19	20	21	22	23	24	25	18	19	20	21	22	23	24
26	27	28	29	30	31	..	26	27	28	29	30	..	..	25	26	27	28	29	30	31
..
NOVEMBER							MAY							NOVEMBER						
..	..	..	..	..	..	1	..	..	..	..	..	1	2	1	2	3	4	5	6	7
2	3	4	5	6	7	8	3	4	5	6	7	8	9	8	9	10	11	12	13	14
9	10	11	12	13	14	15	10	11	12	13	14	15	16	15	16	17	18	19	20	21
16	17	18	19	20	21	22	17	18	19	20	21	22	23	22	23	24	25	26	27	28
23	24	25	26	27	28	29	24	25	26	27	28	29	30	29	30	..	..	..	..	..
30	..	..	..	..	..	..	31	..	..	..	..	..	..	..	..	..	..	..	..	..
DECEMBER							JUNE							DECEMBER						
..	1	2	3	4	5	6	..	1	2	3	4	5	6	..	..	1	2	3	4	5
7	8	9	10	11	12	13	7	8	9	10	11	12	13	6	7	8	9	10	11	12
14	15	16	17	18	19	20	14	15	16	17	18	19	20	13	14	15	16	17	18	19
21	22	23	24	25	26	27	21	22	23	24	25	26	27	20	21	22	23	24	25	26
28	29	30	31	..	..	..	28	29	30	..	..	..	..	27	28	29	30	31	..	..

UNIVERSITY CALENDAR

1913-1914

The University year covers a period of thirty-eight weeks, beginning on the second Tuesday in September. Commencement Day is always the second Thursday in June.

1913

September	2	Tuesday	Registration closes except for new students
September	2- 9	Week	Fees payable except for new students
September	8-15	Week	Examinations for removal of conditions, entrance examinations, registration of new students, and payment of fees
September	10-16	Week	Military encampment of cadets
September	17	Wednesday	First semester begins
November	26	Wednesday	Thanksgiving recess begins 9:00 p.m.
December	1	Monday	Thanksgiving recess ends 8:00 a.m.
December	19	Friday	Christmas vacation begins 9:00 p.m.

1914

January	6	Tuesday	Christmas vacation ends 8:00 a.m.
January	20	Tuesday	Registration for second semester closes
January	26	Monday	Final examinations begin
January	27	Tuesday	Payment of fees for second semester closes
February	4	Wednesday	Second semester begins
February	12	Thursday	Lincoln's Birthday: a holiday
February	13	Friday	First semester class reports due
April	8	Wednesday	Easter recess begins 9:00 p.m.
April	16	Thursday	Easter recess ends 8:00 a.m.
May	30	Saturday	Decoration Day: a holiday
June	1	Monday	Final examinations begin
June	6	Saturday	Second semester closes
June	7	Sunday	Baccalaureate service
June	8	Monday	Senior class day exercises
June	10	Wednesday	Alumni Day
June	11	Thursday	Forty-second Annual Commencement
June	12	Friday	Summer vacation begins

The University year for 1914-15 will begin Tuesday, September 8.

Program of Entrance Examinations 1913-14

Entrance examinations for admission to the various colleges of the University will be conducted according to the following schedule, in Room 112, Library Building, unless otherwise specified.

Any student finding a conflict in his program should report to the Registrar for adjustment.

Monday,	Sept. 8	9 a.m.	Business Subjects
		2 p.m.	Manual Subjects, Domestic Art and Science, Agriculture
Tuesday,	Sept. 9	9 a.m.	Astronomy, Botany, Geology, Chemistry, Physiography, Zoology, Physics, Physiology
		2 p.m.	American Government, History, Economics, Commercial Geography, History of Commerce, Economic History of England, Economic History of the United States
Wednesday,	Sept. 10	9 a.m.	English
		2 p.m.	German, Greek, French, Latin, Scandinavian, Spanish
Thursday,	Sept. 11	9 a.m.	Elementary Algebra
		2 p.m.	Higher Algebra
Friday,	Sept. 12	9 a.m.	Plane Geometry
		2 p.m.	Solid Geometry

A representative of each department will be at the office of the head of the department each forenoon of entrance examination week from 9 to 12 to give information and advice.

THE UNIVERSITY

THE COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

THE COLLEGE OF ENGINEERING AND THE MECHANIC ARTS

THE DEPARTMENT OF AGRICULTURE, including—

THE COLLEGE OF AGRICULTURE

THE COLLEGE OF FORESTRY, including—

FOREST EXPERIMENT STATIONS AT ITASCA AND CLOQUET

THE CENTRAL SCHOOL OF AGRICULTURE, UNIVERSITY FARM, including—

THE DAIRY SCHOOL

THE SHORT COURSE FOR FARMERS

TEACHERS' SUMMER TRAINING SCHOOL

THE SCHOOL OF TRACTION ENGINEERING

THE NORTHWEST SCHOOL OF AGRICULTURE, CROOKSTON

THE WEST CENTRAL SCHOOL OF AGRICULTURE, MORRIS

THE EXPERIMENT STATIONS, including—

THE MAIN STATION, ST. ANTHONY PARK

THE NORTHWEST EXPERIMENT STATION, CROOKSTON

THE NORTH CENTRAL EXPERIMENT STATION, GRAND RAPIDS

THE WEST CENTRAL EXPERIMENT STATION, MORRIS

THE NORTHEAST DEMONSTRATION FARM AND EXPERIMENT STATION, DULUTH

THE SOUTHEAST DEMONSTRATION FARM AND EXPERIMENT STATION, WASECA

THE FRUIT-BREEDING FARM, ZUMBRA HEIGHTS

THE LAW SCHOOL

THE MEDICAL SCHOOL, including—

THE SCHOOL FOR NURSES

THE COLLEGE OF DENTISTRY

THE COLLEGE OF PHARMACY

THE SCHOOL OF MINES, including—

MINNESOTA SCHOOL OF MINES EXPERIMENT STATION

THE SCHOOL OF ANALYTICAL AND APPLIED CHEMISTRY

THE COLLEGE OF EDUCATION

THE GRADUATE SCHOOL

THE UNIVERSITY EXTENSION SERVICE, including—

GENERAL EXTENSION DIVISION

AGRICULTURAL EXTENSION DIVISION

THE BOARD OF REGENTS

The Hon. JOHN LIND, Minneapolis, President of the Board	-	-	1914
GEORGE EDGAR VINCENT, Minneapolis	-	-	-
The President of the University	-	-	-
The Hon. ADOLPH O. EBERHART, Mankato	-	-	-
The Governor of the State	-	-	-
The Hon. C. G. SCHULZ, St. Paul	-	-	-
The Superintendent of Education	-	-	-
The Hon. JOHN G. WILLIAMS, Duluth	-	-	-
The Hon. A. E. RICE, Willmar	-	-	-
The Hon. CHARLES L. SOMMERS, St. Paul	-	-	-
The Hon. B. F. NELSON, Minneapolis	-	-	-
The Hon. PIERCE BUTLER, St. Paul	-	-	-
The Hon. FRED B. SNYDER, Minneapolis	-	-	-
The Hon. W. J. MAYO, Rochester	-	-	-
The Hon. MILTON M. WILLIAMS, Little Falls	-	-	-

EXECUTIVE OFFICERS

GEORGE EDGAR VINCENT, Ph.D., LL.D., President
ERNEST B. PIERCE, B.A., Registrar
GEORGE H. HAYES, University Comptroller and Secretary of the Board of Regents
JAMES T. GEROULD, B.A., Librarian
JOHN F. DOWNEY, M.A., C.E., Dean of the College of Science, Literature, and the Arts
FRANCIS C. SHENEHON, C.E., Dean of the College of Engineering and the Mechanic Arts
ALBERT F. WOODS, M.A., Dean and Director of the Department of Agriculture
EDWARD M. FREEMAN, Ph.D., Assistant Dean of the Department of Agriculture
WILLIAM R. VANCE, Ph.D., LL.B., Dean of the Law School
ELIAS POTTER LYON, Ph.D., M.D., Dean of the Medical School
ALFRED OWRE, B.A., M.D., C.M., D.M.D., Dean of the College of Dentistry
FREDERICK J. WULLING, Ph.D., LL.M., Dean of the College of Pharmacy
WILLIAM R. APPLEBY, M.A., Dean of the School of Mines
GEORGE B. FRANKFORTER, M.A., Ph.D., Dean of the School of Chemistry
GEORGE F. JAMES, Ph.D., Dean of the College of Education
GUY STANTON FORD, Ph.D., Dean of the Graduate School
RICHARD R. PRICE, M.A., Director of University Extension
MARGARET SWEENEY, Ph.D., Dean of Women

THE UNIVERSITY OF MINNESOTA

OFFICERS OF INSTRUCTION AND ADMINISTRATION

1912-13

FACULTY

- GEORGE EDGAR VINCENT, Ph.D., LL.D., President
B.A., Yale, 1885; Ph.D., Chicago, 1896; LL.D., Chicago, 1911; LL.D., Yale, 1911.
- CYRUS NORTHROP, LL.D., President, Emeritus
B.A., Yale, 1857; LL.B., Yale, 1859; LL.D., Yale, 1886; LL.D., Wisconsin, Illinois College, South Carolina College.
- AMOS WILSON ABBOTT, M.D., Professor of Gynecology, Emeritus
M.D., College of Physicians and Surgeons (Columbia), 1869.
- EVERTON JUDSON ABBOTT, B.A., M.D., Professor of Clinical Medicine, Emeritus
B.A., Western Reserve, 1873; M.D., Western Reserve, 1875.
- FRED LYMAN ADAIR, B.S., M.D., Assistant Professor of Obstetrics and Gynecology
B.S., Minnesota, 1898; M.D., Rush Medical College, 1901.
- CEPHAS DANIEL ALLIN, LL.B., M.A., Assistant Professor of Political Science
B.A., Toronto, 1897; LL.B., Toronto, 1899; M.A., Harvard, 1900.
- JOHN HOWARD ALLISON, Ph.B., M.F., Professor of Forestry
Ph.B., Sheffield Scientific School (Yale), 1905; M.F., Yale Forest School, 1906.
- FRANK MALOY ANDERSON, M.A., Professor of History, Chairman of the Department of History, 1912-13
B.A., Minnesota, 1894; M.A., Minnesota, 1896.
- CHARLES MARTIN ANDRIST, M.L., Professor of French
B.L., Minnesota, 1894; M.L., Minnesota, 1897; graduate work at Collège de France and the Sorbonne.
- *STEPHEN T. ANTHONY, Chemist in Animal Nutrition, Agricultural Experiment Station
Diploma from Academy of Agriculture in Weihestephan, Germany, 1904; from Polytechnic University, Munich, 1905.
- WILLIAM REMSEN APPLEBY, M.A., Dean of the School of Mines and Professor of Metallurgy
B.A., Williams, 1886; M.A., Williams, 1893.
- ALBERT CEDRIC ARMY, B.S. in Agr., Assistant Professor of Agronomy and Assistant Agronomist, Agricultural Experiment Station
B.S. in Agr., Minnesota, 1909.
- GUSTAV BACHMAN, Phm.M., Assistant Professor of Pharmacy
Phm.D., Minnesota, 1900; Phm.M., Minnesota, 1901.
- LOUIS BENEDICT BALDWIN, M.D., Superintendent, University Hospitals
M.D., Minnesota, 1897.

*On leave of absence from November 1, 1912 to December 1, 1913.

- FREDERIC HERBERT BASS, B.S., Professor of Municipal and Sanitary Engineering
B.S., Massachusetts Institute of Technology, 1901.
- LOUIS BENJAMIN BASSETT, Assistant Professor of Farm Management and Assistant Agriculturist, Agricultural Experiment Station
Minnesota School of Agriculture, 1896.
- GEORGE NEANDER BAUER, Ph.D., Professor of Mathematics
B.S., Minnesota, 1894; M.S., Iowa, 1898; Ph.D., Columbia, 1900.
- JOSEPH WARREN BEACH, Ph.D., Assistant Professor of English
B.A., Minnesota, 1900; M.A., Harvard, 1902; Ph.D., Harvard, 1907.
- RICHARD OLDING BEARD, M.D., Professor of Physiology, Director of the Department of Physiology and Pharmacology
M.D., Northwestern, 1882.
- ELEXIOUS THOMPSON BELL, B.S., M.D., Assistant Professor of Pathology
B.S., Missouri, 1901; M.D., Missouri, 1903.
- JOHN WESLEY BELL, M.D., Professor of Clinical Medicine and Physical Diagnosis, Emeritus
M.D., Ohio Medical College, 1876.
- HENRY ADAMS BELLOWES, Ph.D., Assistant Professor of Rhetoric
B.A., Harvard, 1906; Ph.D., Harvard, 1910.
- CHARLES WILLIAM BENTON, Litt.D., Professor of the French Language and Literature, Head of the Department of Romance Languages
B.A., Yale, 1874; B.D., Union Seminary, 1877; M.A., Yale, 1897; Litt.D., Western University of Pennsylvania, 1897.
- HERBERT FLOYD BERGMAN, B.Sc., Assistant Professor of Botany
B.Sc., Kansas State Agricultural College, 1905.
- MARGARET JOSEPHINE BLAIR, Assistant Professor of Domestic Art, in charge of Section
- ANDREW BOSS, Professor of Agriculture, Chief of the Division of Agronomy and Farm Management, and Agriculturist, Agricultural Experiment Station
- GISLE CHRISTIAN JOHNSON BOTHNE, M.A., Professor of Scandinavian Languages and Literatures, Head of the Department of Scandinavian Languages
B.A., Luther, 1878; M.A., Luther, 1883.
- PETER JOHN BREKHUS, B.A., D.D.S., Assistant Professor of Crown and Bridge Work
B.A., Augsburg, 1902; D.D.S., Minnesota, 1910.
- WILLIAM ELLSWORTH BROOKE, B.C.E., M.A., Professor of Mathematics and Mechanics, Head of the Department of Mathematics and Mechanics
B.C.E., Nebraska, 1892; M.A., Nebraska, 1896.
- EDGAR DEWIGHT BROWN, Phm.D., M.D., Professor of Materia Medica and Pharmacology
Ph.G., N. Y. College of Pharmacy, 1898; Phm.D., N. Y. College of Pharmacy, 1899; M.D., Western Reserve, 1902.
- ALVAH M. BULL, Assistant Professor of Agricultural Engineering, and Superintendent of Buildings and Power Plant, University Farm

- COATES PRESTON BULL, B.Agr., Associate Professor of Agronomy and Associate Agronomist, Agricultural Experiment Station
B.Agr., Minnesota, 1901.
- FRANK EARL BURCH, M.D., Assistant Professor of Ophthalmology and Otology
M.D., Minnesota, 1897.
- OSCAR CARL BURKHARD, M.A., Assistant Professor of German
B.A., Minnesota, 1901; M.A., Minnesota, 1904.
- RICHARD BURTON, Ph.D., Professor of English Literature, Head of the Department of English
B.A., Trinity, 1883; Ph.D., Johns Hopkins, 1888; L.H.D., Trinity, 1906.
- WILLIAM HENRY BUSSEY, Ph.D., Assistant Professor of Mathematics
B.A., Northwestern, 1900; M.A., Harvard, 1902; Ph.D., Chicago, 1904.
- FREDERIC KING BUTTERS, B.S., B.A., Assistant Professor of Botany
B.S., Minnesota, 1899; B.A., Harvard, 1900.
- LE ROY CADY, B.S. in Agr., Associate Professor of Horticulture, Chairman of the Horticultural Committee, and Horticulturist, Agricultural Experiment Station
B.S. in Agr., Minnesota, 1907.
- ABRAHAM BARKER CATES, M.A., M.D., Professor of Obstetrics, Acting Chief of the Department of Obstetrics and Gynecology from February 1 to July 31, 1913.
B.A., Colby College, 1874; M.A., Colby College, 1877; M.D., Harvard Medical School, 1880.
- EDWARD G. CHEYNEY, B.A., Professor of Forestry, Director of the College of Forestry, and Forester, Agricultural Experiment Station
B.A., Cornell, 1900; graduate work at Yale Forest School, 1904-5.
- PETER CHRISTIANSON, B.S., E.M., Professor of Metallurgy
B.S., Minnesota, 1890; B.E.M., Minnesota, 1894; E.M., Minnesota, 1898.
- JAMES TRENT CHRISTISON, M.D., Professor of Pediatrics
M.D., Minnesota, 1901.
- JOHN SINCLAIR CLARK, B.A., Professor of Latin Language and Literature
B.A., Minnesota, 1876.
- FREDERIC EDWARD CLEMENTS, Ph.D., Professor of Botany, Head of the Department of Botany
B.Sc., Nebraska, 1894; M.A., Nebraska, 1896; Ph.D., Nebraska, 1898.
- ALEXANDER R. COLVIN, M.D., Clinical Professor of Surgery
M.D., McGill, 1894.
- ELTING HOUGHTALING COMSTOCK, M.S., Professor of Mechanics and Mathematics, Head of the Department of Mechanics and Mathematics
B.S., Wisconsin, 1897; M.S., Minnesota, 1907.
- FRANK HENRY CONSTANT, C.E., Professor of Structural Engineering
C.E., Cincinnati, 1891.
- EDWARD ALBERT COOK, B.L., Assistant Professor of Rhetoric
B.L., Wisconsin, 1900.

- LOUIS JOSEPH COOKE, M.D., Director of Health and Physical Education for Men, Medical Examiner, and Director of Gymnasium M.D., Vermont, 1894.
- JAMES FRANK CORBETT, M.D., Associate Professor of Experimental Surgery M.D., Minnesota, 1896.
- NORMAN JEFFREY COX, B.S., D.M.D., Assistant Professor of Operative Dentistry B.S., Minnesota, 1898; D.M.D., Minnesota, 1901.
- HARDIN CRAIG, Ph.D., Professor of English B.A., Center College, 1897; M.A., Princeton, 1899; Ph.D., Princeton, 1901.
- JOHN GROSVENOR CROSS, M.S., M.D., Clinical Professor of Medicine B.S., Minnesota, 1892; M.S., Northwestern, 1895; M.D., Northwestern, 1895.
- ALVIN SAYLES CUTLER, C.E., Assistant Professor of Railway Engineering C.E., Minnesota, 1905.
- HANS H. DALAKER, B.A., Assistant Professor of Mathematics B.A., Minnesota, 1902.
- GEORGE MYRON DAMON, D.D.S., Assistant Professor of Prosthetic Dentistry and Dental Anatomy D.D.S., Minnesota, 1907.
- WILLIAM STEARNS DAVIS, Ph.D., Professor of Ancient History B.A., Harvard, 1900; M.A., Harvard, 1901; Ph.D., Harvard, 1905.
- WARREN ARTHUR DENNIS, B.L., M.D., Clinical Professor of Surgery B.L., Wisconsin, 1891; M.D., Minnesota, 1896.
- IRA HARRIS DERBY, Ph.D., Assistant Professor of Chemistry B.S., Harvard, 1899; Ph.D., Chicago, 1910.
- JOHN DITTMANN, Expert in charge of Alcohol Investigations, Agricultural Experiment Station Diploma from Weihenstephan, Germany, 1911.
- MAXWELL J. DORSEY, M.S. in Agr., Research Technologist in Fruit-Breeding, Agricultural Experiment Station B.S., Michigan Agricultural College, 1906; M.S. in Agr., Cornell, 1910.
- HAL DOWNEY, Ph.D., Assistant Professor of Comparative Histology B.A., Minnesota, 1903; M.A., Minnesota, 1904; Ph.D., Minnesota, 1909.
- JOHN FLORIN DOWNEY, M.A., C.E., Dean of the College of Science, Literature, and the Arts, Professor of Mathematics, and Head of the Department of Mathematics B.S., Hillsdale College, 1870; M.S., Hillsdale College, 1873; M.A., Hillsdale College, 1877; C.E., State College of Pennsylvania, 1877; graduate work at Michigan, Edinburgh and Göttingen.
- ARTHUR W. DUNNING, M.D., Clinical Professor of Nervous and Mental Diseases M.D., College of Physicians and Surgeons, 1885.
- JOHN FRANKLIN EBERSOLE, M.A., Assistant Professor of Economics and Political Science Ph.B., Chicago, 1907; M.A., Harvard, 1909.

- HENRY TURNER EDDY, C.E., Ph.D., LL.D., D.Sc., Professor of Mathematics and Mechanics, and Dean, Emeritus
B.A., Yale, 1867; Ph.B., Sheffield Scientific School, 1868; M.A., Yale, 1870; C.E., Cornell, 1870; Ph.D., Cornell, 1872; LL.D., Center College, 1892; D.Sc., Yale, 1912.
- WILLIAM HARVEY EMMONS, Ph.D., Professor of Geology and Mineralogy, Head of the Department of Geology and Mineralogy
B.A., Central College, 1897; Ph.D., Chicago, 1904.
- CHARLES ANDREW ERDMANN, M.D., Professor of Gross and Applied Anatomy
Ph.G., Wisconsin, 1887; M.D., Minnesota, 1893.
- HENRY ANTON ERIKSON, Ph.D., Assistant Professor of Physics
B.E.E., Minnesota, 1896; Ph.D., Minnesota, 1908.
- INA FIRKINS, B.L., Reference Librarian, General Library
B.L., Minnesota, 1888.
- OSCAR W. FIRKINS, M.A., Assistant Professor of English
B.A., Minnesota, 1884; M.A., Minnesota, 1898.
- JOHN JOSEPH FLATHER, Ph.B., M.M.E., Professor of Mechanical Engineering, Head of the Department of Mechanical Engineering
Ph.B., Yale, 1885; M.M.E., Cornell, 1890.
- HENRY JESSE FLETCHER, LL.M., Professor of Law
LL.M., Minnesota, 1902.
- WILLIAM WATTS FOLWELL, LL.D., Professor of Political Science, Emeritus
B.A., Hobart, 1857; M.A., Hobart; LL.D., Hobart, 1880.
- DANIEL FORD, M.A., Assistant Professor of Rhetoric
B.L., Dartmouth, 1889; M.A., Harvard, 1905.
- BURNSIDE FOSTER, B.A., M.D., Professor of Dermatology and Syphilology and Lecturer upon the History of Medicine
B.A., Yale, 1882; M.D., Harvard, 1886.
- GEORGE BELL FRANKFORTER, Ph.D., Dean of the School of Chemistry, Professor of Chemistry
B.Sc., Nebraska, 1886; M.A., Nebraska, 1888; Ph.D., Berlin, 1893.
- FRANCIS COWLES FRARY, Ph.D., Assistant Professor of Chemistry
Analytical Chemist, Minnesota, 1905; M.S., Minnesota, 1906; Ph.D., Minnesota, 1912.
- WILLIAM HARDY FRAZIER, B.S., Assistant Professor of Soils and Assistant Soils Chemist, Agricultural Experiment Station
B.S., Minnesota, 1907.
- EDWARD MONROE FREEMAN, Ph.D., Assistant Dean of the Department of Agriculture, Professor of Vegetable Pathology and Botany, Chief of the Division of Botany and Plant Pathology, and Plant Pathologist and Agricultural Botanist, Agricultural Experiment Station
B.S., Minnesota, 1898; M.S., Minnesota, 1899; Ph.D., Minnesota, 1905.
- JULES THEOPHILE FRELIN, B.A., Assistant Professor of French
B.A., Minnesota, 1905.
- JAMES THAYER GEROULD, B.A., Librarian, General Library
B.A., Dartmouth, 1895.
- JAMES STERLING GILFILLAN, M.D., Clinical Professor of Medicine
M.D., Minnesota, 1907; Pennsylvania, 1908.

- ARTHUR JAY GILLETTE, M.D., Professor of Orthopedic Surgery
M.D., St. Paul Medical College, 1886; M.D., Minnesota, 1903.
- HENRY SAMUEL GODFREY, D.M.D., Associate Professor of Operative
Dentistry
D.M.D., Minnesota, 1897.
- JOHN EVENSON GRANRUD, Ph.D., Professor of Latin
B.A., Luther College, 1886; M.A., Luther, 1890; Ph.D., Cornell, 1892.
- *JOHN HENRY GRAY, Ph.D., Professor of Economics and Political Science,
Head of the Department of Economics and Political Science
B.A., Harvard, 1887; Ph.D., Halle, 1892.
- ROBERT O. GREEN, D.D.S., Assistant Professor of Operative Dentistry
D.D.S., Minnesota, 1904.
- CHARLES LYMAN GREENE, M.D., Professor of Medicine, Chief of the
Department of Medicine
M.D., Minnesota, 1890.
- CHARLES ARTHUR GRIFFITH, D.D.S., Assistant Professor of Operative
Dentistry
D.D.S., Minnesota, 1907.
- FRANK FITCH GROUT, M.S., Assistant Professor of Geology and Mineral-
ogy
B.S., Minnesota, 1904; M.S., Minnesota, 1908.
- THEOPHILUS LEVI HAECKER, Professor of Dairy and Animal Husbandry,
Chief of Division of Dairy and Animal Husbandry, Dairy and
Animal Husbandman, Agricultural Experiment Station
- MILDRETH JANET HAGGARD, B.A., Chemist in Animal Nutrition, Agri-
cultural Experiment Station
B.A., Minnesota, 1907.
- ARTHUR S. HAMILTON, B.S., M.D., Assistant Professor of Nervous and
Mental Diseases
B.S., Iowa, 1894; M.D., Pennsylvania, 1897.
- CHARLES HARALSON, Superintendent, Fruit-Breeding Farm, Excelsior
- EVERHART PERCY HARDING, Ph.D., Assistant Professor of Chemistry
B.A., Minnesota, 1894; M.S., Minnesota, 1895; Ph.D., Heidelberg, 1900.
- THOMAS BRADFORD HARTZELL, D.M.D., M.D., Professor of Oral Surgery,
Therapeutics, and Clinical Pathology
D.M.D., Minnesota, 1893; M.D., Minnesota, 1894.
- GEORGE DOUGLAS HEAD, B.S., M.D., Associate Professor of Medicine
B.S., Minnesota, 1892; M.D., Minnesota, 1895.
- ALBERT CHENEY HEATH, B.A., M.D., Clinical Professor of Rhinology
and Laryngology
B.A., Dartmouth, 1891; M.D., Minnesota, 1894.
- EDGAR CREIGHTON HIGBIE, M.A., Superintendent, West Central School
and Station, Morris
B.A. in Educ., Minnesota, 1907; M.A., Minnesota, 1909.

* Absent on leave from February 1, 1912, to February 1, 1913.

- *RALPH HOAGLAND, B.Agr., Professor of Agricultural Chemistry and Soils, Chief of Division of Agricultural Chemistry and Soils, and Soils and Agricultural Chemist, Agricultural Experiment Station
B.Agr., Minnesota, 1904.
- NED L. HUFF, M.A., Assistant Professor of Botany
B.A., Minnesota, 1903; M.A., Minnesota, 1906.
- JOHN CORRIN HUTCHINSON, B.A., Professor of Greek, Head of the Department of Greek
B.A., Minnesota, 1876.
- GEORGE FRANCIS JAMES, Ph.D., Dean of the College of Education, Professor of Education
B.A., Michigan, 1886; M.A., Michigan, 1887; Ph.D., Halle, 1894.
- ALBERT ERNEST JENKS, Ph.D., Professor of Anthropology
B.S., Kalamazoo College, 1896; B.S., Chicago, 1897; Ph.D., Wisconsin, 1899.
- JOHN BLACK JOHNSTON, Ph.D., Professor of Comparative Neurology and Secretary of the Faculty of the College of Medicine and Surgery
Ph.B., Michigan, 1893; Ph.D., Michigan, 1899.
- WILLIAM ALEXANDER JONES, M.D., Professor of Nervous and Mental Diseases
M.D., University of City of New York, 1881.
- †HANS JUERGENSEN, M.A., Assistant Professor of German
M.A., Concordia College, 1904.
- WILLIAM HARRISON KAVANAUGH, M.E., Professor of Experimental Engineering, Head of the Department of Experimental Engineering
M.E., Lehigh, 1894.
- WILLIAM HENRY KENETY, M.S., in charge of Cloquet Forest Experiment Station
B.S. in For., Minnesota, 1911, M.S., Minnesota, 1912.
- DAVID LITCHARD KIEHLE, LL.D., Professor of Education, Emeritus
B.A., Hamilton College, 1861; M.A., Hamilton, 1864; LL.D., Hamilton, 1887.
- MERTON STEPHEN KINGSTON, E.M., Assistant Professor of Mining
E.M., Minnesota, 1904.
- WILLIAM HERMAN KIRCHNER, B.S., Professor of Drawing and Descriptive Geometry, Head of the Department of Drawing and Descriptive Geometry
B.S., Worcester Polytechnic, 1887.
- FREDERICK KLAEBER, Ph.D., Professor of Comparative and English Philology, Head of the Department of Comparative Philology
Ph.D., Berlin, 1892.
- ALFRED RUDOLPH KOHLER, M.S., Assistant Professor of Horticulture and Assistant Horticulturist, Agricultural Experiment Station
B.S.A., Iowa State College, 1906; M.S., Minnesota, 1912.
- ALOIS FRANCIS KOVARIK, Ph.D., Assistant Professor of Physics
B.A., Minnesota, 1904; M.A., Minnesota, 1907; Ph.D., Minnesota, 1909.

* Resigned April, 1913.

† Died September 5, 1912.

- EDWIN MAXIMILIAN LAMBERT, M.E., Assistant Professor of Mechanics and Mathematics
M.E., Minnesota, 1909.
- ROBERT CHEEK LANSING, M.A., Assistant Professor of English
B.S., Nebraska, 1899; M.A., Nebraska, 1901.
- WINFORD PORTER LARSON, M.D., Assistant Professor of Bacteriology and Pathology
M.D., Illinois, 1904.
- WILLIAM FREDERICK LASBY, B.A., D.D.S., Associate Professor of Prosthetic Dentistry
B.A., Carleton, 1900; D.D.S., Minnesota, 1903.
- ARTHUR AYER LAW, M.D., Clinical Professor of Surgery
M.D., Minnesota, 1894.
- HARRY COMEGYS LAWTON, D.D.S., Assistant Professor of Prosthetic Dentistry and Orthodontia
D.D.S., Minnesota, 1908.
- FRANCIS P. LEAVENWORTH, M.A., Professor of Astronomy, Head of the Department of Astronomy
B.A., Indiana, 1880; M.A., Indiana, 1887.
- FREDERICK ELMER LEAVITT, M.D., Clinical Professor of Obstetrics and Gynecology, and Clerk of Clinics
M.D., Minnesota, 1894.
- THOMAS GEORGE LEE, B.S., M.D., Professor of Anatomy, Director of the Department of Anatomy, and Librarian, Department of Medicine
M.D., Pennsylvania, 1886; B.S., Harvard, 1892.
- EDWARD M. LEHNERTS, M.A., Assistant Professor of Geography
B.S., Pennsylvania, 1902; M.A., Minnesota, 1908.
- CHARLES CLINTON LIPP, D.V.M., Assistant Professor of Veterinary Medicine and Surgery, and Assistant Veterinarian, Agricultural Experiment Station
D.V.M., Ohio, 1903.
- JENNINGS CRAWFORD LITZENBERG, B.S., M.D., Associate Professor of Gynecology and Obstetrics, and Chief of Staff, Out-Patient Department, University Hospitals
B.S., Minnesota, 1894; M.D., Minnesota, 1899.
- EDWARD PROSPER MCCARTY, E.M., Professor of Mining, Head of the Department of Mining
E.M., Minnesota, 1900.
- ARTHUR JAMES MCGUIRE, B.Agr., Superintendent, North Central Substation, Grand Rapids
B.Agr., Minnesota, 1904.
- ARCHIBALD MACLAREN, B.S., M.D., Clinical Professor of Surgery
B.S., Princeton, 1880; M.D., College of Physicians and Surgeons, New York, 1883.
- JOHN SILLIMAN MACNIE, B.A., M.D., Clinical Professor of Ophthalmology and Otology
B.A., North Dakota, 1893; M.D., Columbia, 1896.

- ERNEST WILLIAM MAJOR, B.Agr., Associate Professor of Animal Nutrition and Associate Animal Nutrition Specialist, Agricultural Experiment Station
B.Agr., Minnesota, 1899.
- ARTHUR TEALL MANN, B.S., M.D., Clinical Professor of Surgery, and Clerk of Clinics
B.S., Minnesota, 1888; M.D., Harvard, 1896.
- JOHN VAN SICKLE MARTENIS, M.E., Assistant Professor of Mechanical Engineering
M.E., Lehigh, 1894.
- HERMAN ALBERT MAVES, D.D.S., Assistant Professor of Operative Dentistry
D.D.S., Minnesota, 1905.
- DEXTER DWIGHT MAYNE, Professor of Agricultural Pedagogics, and Principal of Central School of Agriculture
- JAMES BURT MINER, Ph.D., Assistant Professor of Psychology
B.S., Minnesota, 1897; LL.B., Minnesota, 1899; M.S., Minnesota, 1901; Ph.D., Columbia, 1903.
- THOMAS WARNER MITCHELL, Ph.D., Assistant Professor of Business Administration
B.A., Washington, 1900; Ph.D., Pennsylvania, 1905; C.P.A.
- JOSEPH S. MONTGOMERY, B.S. in Agr., Assistant Professor of Animal Husbandry, and Assistant Animal Husbandman, Agricultural Experiment Station
B.S. in Agr., Kansas State Agricultural College, 1907.
- JAMES EDWARD MOORE, M.D., Professor of Surgery, Chief of the Department of Surgery
M.D., Bellevue Hospital Medical College, 1873.
- JOHN G. MOORE, B.A., Professor of German, Head of the Department of German
B.A., Cornell, 1873.
- EDMUND MORRIS MORGAN, Jr., M.A., LL.B., Professor of Law
B.A., Harvard, 1902; M.A., Harvard, 1903; LL.B., Harvard, 1905.
- JASON L. MOWRY, Assistant Professor of Agricultural Engineering and Assistant Agricultural Engineer, Agricultural Experiment Station
M.Di., Iowa State Teachers' College, 1898.
- ROBERT HYNDMAN MULLIN, B.A., M.B., Associate Professor of Pathology and Bacteriology
B.A., Toronto, 1899; M.B., Toronto, 1902.
- WILLIAM ROBBINS MURRAY, Ph.B., M.D., Professor of Rhinology and Laryngology
Ph.B., Michigan, 1892; M.D., Rush Medical College, 1897.
- HENRY F. NACHTRIEB, B.S., Professor of Animal Biology, Head of the Department of Animal Biology
B.S., Minnesota, 1882.
- EDWIN LEIGH NEWCOMB, P.D., Assistant Professor of Pharmaceutical Botany and Pharmacognosy
P.D., Philadelphia College of Pharmacy, 1905.

- BERT LEROY NEWKIRK, Ph.D., Assistant Professor of Mathematics and Mechanics
B.A., Minnesota, 1897; M.A., Minnesota, 1899; Ph.D., Munich, 1902.
- CHARLES WASHBURN NICHOLS, M.A., Assistant Professor of Rhetoric
B.A., Yale, 1905; M.A., Yale, 1907.
- EDWARD E. NICHOLSON, M.A., Assistant Professor of Chemistry
B.S., Nebraska, 1894; M.A., Nebraska, 1896.
- LOUIS A. NIPPERT, M.D., Clinical Professor of Medicine
M.D., Miami Medical College, 1883.
- JULIA ANNA NORRIS, M.D., Director of Health and Physical Education for Women
M.D., Northwestern, 1900.
- WALLACE NOTESTEIN, Ph.D., Assistant Professor of History
B.A., Wooster, 1900; M.A., Yale, 1903; Ph.D., Yale, 1908.
- HENRY JOSEPH O'BRIEN, M.D., Clinical Professor of Surgery
M.D., Pennsylvania, 1888.
- OSCAR WILLIAM OESTLUND, Ph.D., Assistant Professor of Animal Biology
B.A., Augustana, 1879; M.A., Augustana, 1887; Ph.D., Augustana, 1900.
- FORREST HOY ORTON, D.D.S., Professor of Crown and Bridge Work
D.D.S., California, 1890.
- WIELAND LEO OSWALD, Assistant Professor of Agricultural Botany, and Assistant Agriculturist and Seed Analyst, Agricultural Experiment Station
- ALFRED OWRE, B.A., M.D., C.M., D.M.D., Dean of the College of Dentistry, Professor of Operative Dentistry and Dental Metallurgy
D.M.D., Minnesota, 1894; M.D., C.M., Minneapolis College of Physicians and Surgeons, 1895; B.A., Minnesota, 1910.
- ALFRED ALBERT PAGENKOPF, D.D.S., Assistant Professor of Crown and Bridge Work
D.D.S., Minnesota, 1909.
- JAMES PAIGE, M.A., LL.M., Professor of Law
B.A., Princeton, 1887; M.A., Princeton, 1888; LL.B., Minnesota, 1890; LL.M., Minnesota, 1893.
- ELMER HIRAM PARKER, B.S., M.D., Assistant Professor of Rhinology and Laryngology
B.S., Wisconsin, 1885; M.D., Northwestern, 1891.
- THOMAS GEORGE PATERSON, B.S. in Agr., Assistant Professor of Animal Husbandry, and Assistant Animal Husbandman, Agricultural Experiment Station
B.S. in Agr., Minnesota, 1909.
- LEVI BECKLEY PEASE, M.S., Professor of Metallurgy
B.S., Minnesota, 1898; M.S., Minnesota, 1899.
- JAY N. PIKE, D.D.S., Associate Professor of Orthodontia
D.D.S., Minnesota, 1903.
- JOSEPH BROWN PIKE, M.A., Professor of Latin, Head of the Department of Latin
B.A., Minnesota, 1890; M.A., Minnesota, 1892.

LOUISE MATHILDE POWELL, R.N., Superintendent of the School for Nurses

Bachelor's Diploma in Education, Department Hospital Economics, Teachers' College, New York City, 1910.

*EDWARD G. QUIGLEY, B.A., Assistant Professor of Education

B.A., Iowa, 1904.

†SAMUEL QUIGLEY, M.A., Assistant Professor of Education; in charge of University Extension Work

M.Di., Iowa State Teachers' College, 1895; B.A., Iowa, 1906; M.A., Chicago, 1911.

WALTER REEVE RAMSEY, M.D., Clinical Professor of Pediatrics

M.D., Minnesota, 1896.

ALBERT WILLIAM RANKIN, B.A., Professor of Education

B.A., Minnesota, 1880.

JOHN OWEN RANKIN, M.A., Editor of Bulletins, Department of Agriculture

B.A., Tarkio, 1904; B.S.A., Iowa State, 1908; M.A., George Washington, 1912.

FRANK MILLER RARIG, M.A., Assistant Professor of Rhetoric

B.A., Northwestern, 1903; M.A., Northwestern, 1905.

SAMUEL NICHOLAS REEP, Ph.D., Assistant Professor of Sociology

B.A., Drake University, 1903; M.A., Northwestern College, 1905; Ph.D., Chicago, 1910.

SOREN P. REES, B.S., M.D., Clinical Professor of Medicine

B.S., Minnesota, 1895; M.D., Minnesota, 1897.

MYRON HERBERT REYNOLDS, B.S.A., D.V.M., M.D., Ph.G., Professor of Veterinary Medicine and Surgery, and Veterinarian, Agricultural Experiment Station

B.S.A., Iowa Agricultural College, 1886; D.V.M., Iowa Agricultural College, 1889; M.D. and Ph.G., Iowa College of Physicians and Surgeons (Drake University), 1891.

CHARLES EUGENE RIGGS, M.A., M.D., Professor of Nervous and Mental Diseases, Chief of the Department of Mental and Nervous Diseases

B.A., Ohio Wesleyan, 1877; M.A., Ohio Wesleyan, 1880; M.D., College of Physicians and Surgeons, Baltimore, 1880.

HARRY PARKS RITCHIE, Ph.B., M.D., Assistant Professor of Surgery

Ph.B., Scheffield Scientific School (Yale), 1893; M.D., Minnesota, 1896.

‡PARKS RITCHIE, M.D., Professor of Obstetrics and Gynecology, Chief of the Department of Obstetrics and Gynecology

M.D., Ohio Medical College, 1870.

THOMAS SADLER ROBERTS, M.D., Clinical Professor of Pediatrics

M.D., Pennsylvania, 1885.

HAROLD EUGENE ROBERTSON, B.A., M.D., Associate Professor of Pathology and Bacteriology, and Pathologist to the University Hospitals

B.A., Carleton, 1899; M.D., Pennsylvania, 1905.

EDWARD VAN DYKE ROBINSON, Ph.D., Professor of Economics, Acting Head of the Department of Economics and Political Science from February 1, 1912 to February 1, 1913

B.A., Michigan, 1890; M.A., Michigan, 1891; Ph.D., Leipzig, 1895.

*Absent on leave, 1911-13.

†Substitute, 1911-13.

‡Died February 2, 1913.

- HARRY BURGESS ROE, B.S., Assistant Professor of Mathematics and Assistant Agricultural Engineer, Agricultural Experiment Station B.S. in Eng., Minnesota, 1908.
- JOHN THOMAS ROGERS, M.D., Clinical Professor of Surgery M.D., Minnesota, 1891.
- CARL OTTO ROSENDAHL, Ph.D., Professor of Botany B.S., Minnesota, 1901; M.A., Minnesota, 1902; Ph.D., Berlin, 1905.
- JOHN LINCOLN ROTHROCK, M.A., M.D., Clinical Professor of Gynecology B.A., Pennsylvania College, 1885; M.A., Pennsylvania College, 1888; M.D., University of Pennsylvania, 1888.
- *ARTHUR GORDON RUGGLES, M.A., Assistant Professor of Entomology, and Assistant Entomologist, Agricultural Experiment Station B.S.A., Cornell, 1901; M.A., Cornell, 1904.
- WILLIAM THOMAS RYAN, E.E., Assistant Professor of Electrical Engineering E.E., Minnesota, 1905.
- MARIA LOUISA SANFORD, Professor of Rhetoric, Emeritus
- FREDERICK WILLIAM SARDESON, Ph.D., Assistant Professor of Paleontology B.L., Minnesota, 1891; M.S., Minnesota, 1892; Ph.D., Freiburg, 1895.
- CHARLES ALBERT SAVAGE, Ph.D., Professor of Greek B.A., Johns Hopkins, 1895; Ph.D., Johns Hopkins, 1903.
- RICHARD EVERINGHAM SCAMMON, Ph.D., Assistant Professor of Anatomy B.A., Kansas, 1904; M.A., Kansas, 1906; Ph.D., Harvard, 1909.
- WILLIAM A. SCHAPER, Ph.D., Professor of Political Science B.L., Wisconsin, 1895; M.A., Columbia, 1898; Ph.D., Columbia, 1901.
- CARL SCHLENKER, B.A., Professor of German B.A., Michigan, 1892.
- CARLYLE MACROBERTS SCOTT, Professor of Music
- FREDERICK HUGHES SCOTT, Ph.D., M.B., D.Sc., Associate Professor of Physiology B.A., Toronto, 1897; Ph.D., Toronto, 1899; M.B., Toronto, 1906; D.Sc., London, 1908.
- JULIUS PARKER SEDGWICK, B.Sc., M.D., Assistant Research Professor in Physiologic Chemistry and Clinical Instructor in Pediatrics B.Sc., Nebraska, 1896; M.D., Rush Medical College, 1899.
- CONRAD GEORGE SELVIG, M.A., Superintendent, Northwest School and Station, Crookston B.A. in Educ., Minnesota, 1907; M.A., Minnesota, 1908.
- GEORGE E. SENKLER, M.D., Clinical Professor of Medicine M.D., Minnesota, 1892; M.D., Pennsylvania, 1893.
- WALTER DEWITT SHELDEN, B.S., M.D., Clinical Professor of Medicine B.S., Wisconsin, 1891; M.D., Rush Medical College, 1895; graduate work at Vienna, 1901-3.
- FRANCIS CLINTON SHENEHON, C.E., Dean of the College of Engineering and the Mechanic Arts, Professor of Civil Engineering B.C.E., Minnesota, 1895; C.E., Minnesota, 1900.

*On leave of absence from November 1, 1912 to June 1, 1913.

- GEORGE DEFREES SHEPARDSON, M.A., M.E., D.Sc., Professor of Electrical Engineering, Head of the Department of Electrical Engineering
B.A., Denison, 1885; M.A., Denison, 1888; M.E., Cornell, 1889; D.Sc., Harvard, 1912.
- JUNIATA L. SHEPPERD, M.A., Assistant Professor of Domestic Science, in charge of Section
B.A., Oskaloosa College, 1881; M.A., Drake, 1884; graduate Pratt Institute, 1896.
- ANTON SHIMONEK, M.D., Clinical Professor of Surgery
M.D., Rush Medical College, 1879.
- S. CARL SHIPLEY, B.S., M.E., Assistant Professor of Machine Construction
B.S., Missouri, 1900; B.S. (Engineering), Cincinnati, 1901; M.E., Cincinnati, 1903.
- CHARLES FRANKLIN SHOOP, B.S., Assistant Professor of Experimental Engineering
B.S. (Pure Mathematics), Pennsylvania State, 1901; B.S. (Mechanical Engineering), Pennsylvania State, 1904.
- ROYAL RUSS SHUMWAY, B.A., Assistant Professor of Mathematics
B.A., Minnesota, 1903.
- CHARLES FREDERICK SIDENER, B.S., Professor of Chemistry
B.S., Minnesota, 1883.
- CHARLES PETER SIGERFOOS, Ph.D., Professor of Zoology
B.S., Ohio State, 1889; Ph.D., Johns Hopkins, 1897.
- ARTHUR C. SMITH, B.S., Professor of Poultry Husbandry, and Poultry Husbandman, Agricultural Experiment Station
B.S., Massachusetts Institute of Technology, 1892.
- HOWARD R. SMITH, B.S., Professor of Animal Husbandry, and Animal Husbandman, Agricultural Experiment Station
B.S., Michigan Agricultural College, 1895.
- SAMUEL GEORGE SMITH, Ph.D., LL.D., Professor of Sociology, Head of the Department of Sociology and Anthropology
B.A., Cornell, 1872; M.A., Cornell, 1875; D.D., Upper Iowa, 1887; Ph.D., Syracuse, 1880; LL.D., Cornell, 1900.
- HALDOR SNEVE, M.D., Clinical Professor of Mental and Nervous Diseases
M.D., Medical College of Ohio, 1887.
- FRANKLIN WESLEY SPRINGER, E.E., Professor of Electrical Engineering
B.E.E., Minnesota, 1893; E.E., Minnesota, 1898.
- HENRY LORING STAPLES, M.A., M.D., Clinical Professor of Medicine
B.A., Bowdoin, 1881; M.A., Bowdoin, 1884; M.D., Medical School of Maine, 1886.
- JEREMIAH CLARK STEWART, B.S., M.D., Professor of Principles of Surgery
B.S. and C.E., Minnesota, 1875; M.D., College of Physicians and Surgeons, N. Y., 1884.
- JOHN T. STEWART, C.E., Professor of Agricultural Engineering, Chief of the Division of Agricultural Engineering, and Agricultural Engineer, Agricultural Experiment Station
B.S., Illinois, 1893; C.E., Illinois, 1909.

- ANDREW ADIN STOMBERG, M.S., Professor of Scandinavian Languages and Literatures
B.A., Gustavus Adolphus, 1895; M.S., Minnesota, 1896.
- ASHLEY VAN STORM, M.A., Professor of Agricultural Education, Chief of the Division of Agricultural Education
Ph.B., Illinois Wesleyan, 1898; M.A., Iowa, 1912.
- EUGENE SILAS STROUT, M.D., Assistant Professor of Ophthalmology and Otology
M.D., Michigan, 1891.
- ARTHUR SWEENEY, B.A., M.D., Professor of Medical Jurisprudence
B.A., Fordham University, 1880; M.D., Harvard, 1886.
- MARGARET SWEENEY, Ph.D., Dean of Women, Professor of Rhetoric
B.A., Radcliffe, 1899; Ph.D., Yale, 1901.
- HORATIO BARTHOLOMEW SWEETSER, M.D., Clinical Professor of Surgery
M.D., Columbia, 1885.
- DAVID FERDINAND SWENSON, B.S., Assistant Professor of Philosophy
B.S., Minnesota, 1898.
- FLETCHER HARPER SWIFT, Ph.D., Professor of Education
B.A., Dartmouth, 1898; B.D., Union Theological Seminary, 1903; M.A., Columbia, 1904; Ph.D., Columbia, 1905.
- *ROSCOE WILFRED THATCHER, M.A., Professor of Agricultural Chemistry, Chief of the Division of Agricultural Chemistry, and Agricultural Chemist, Agricultural Experiment Station
B.Sc., Nebraska, 1898; M.A., Nebraska, 1901.
- JOSEPH MORRIS THOMAS, Ph.D., Professor of Rhetoric, Head of the Department of Rhetoric and Public Speaking
Ph.B., Michigan, 1898; M.A., Michigan, 1903; Ph.D., Michigan, 1910.
- CARL WILLIAM THOMPSON, M.A., Associate Professor of Economics, Director of Bureau of Research in Agricultural Economics, and Agricultural Economist, Agricultural Experiment Station
B.A., South Dakota, 1903; M.A., Harvard, 1904.
- EDWARD SAMPSON THURSTON, M.A., LL.B., Professor of Law
B.A., Harvard, 1898; M.A., Harvard, 1900; LL.B., Harvard, 1901.
- JOSEPHINE ELIZABETH TILDEN, M.S., Professor of Botany
B.S., Minnesota, 1895; M.S., Minnesota, 1896.
- FRANK CHISHOLM TODD, M.D., Professor of Diseases of the Eye, Ear, Nose, and Throat, Chief of the Department of Eye, Ear, Nose, and Throat
D.D.Sc., Minnesota, 1891; M.D., Minnesota, 1892.
- ANTHONY LISPENARD UNDERHILL, Ph.D., Assistant Professor of Mathematics
B.S., Chicago, 1900; Ph.D., Chicago, 1906.
- CHARLES EDWIN VAN BARNEVELD, B.A.Sc., E.M., Professor of Mining Engineering, Head of the Department of Mining Engineering
B.A.Sc., E.M., McGill, 1895.

*Appointed May 1, 1913.

- WILLIAM REYNOLDS VANCE, Ph.D., LL.B., Dean of the College of Law,
and Professor of Law
B.A., Washington and Lee University, 1892; M.A., Washington and Lee University, 1893; Ph.D., Washington and Lee University, 1895; LL.B., Washington and Lee University, 1897; M.A.(Honorary), Yale, 1909.
- GEORGE WARREN WALKER, B.S. in Chem., Assistant Soils Chemist,
Agricultural Experiment Station
B.S.in Chem., Minnesota, 1909.
- JAMES MARTIN WALLS, D.M.D., Professor of Operative Dentistry
D.M.D., Minnesota, 1894.
- FREDÉRIC LEONARD WASHBURN, M.A., Professor of Entomology, Chief
of the Division of Entomology and Entomologist, Agricultural
Experiment Station
B.A., Harvard, 1882; M.A., Harvard, 1895.
- ROBERT MANN WASHBURN, M.S.A., Associate Professor of Dairy Husbandry, and Associate Dairy Husbandman, Agricultural Experiment Station
B.S.in Agr., Minnesota, 1901; M.S.A., Missouri, 1909.
- OSCAR ALBERT WEISS, D.M.D., Professor of Prosthetic Dentistry and Orthodontia
D.M.D., Minnesota, 1893.
- LOUIS DWIGHT HARVELL WELD, Ph.D., Assistant Professor, Extension Work in Economics and Political Science
B.A., Bowdoin, 1905; M.A., Illinois, 1907; Ph.D., Columbia, 1908.
- AMOS SCHUMPERT WELLS, B.A., D.D.S., Associate Professor of Crown and Bridge Work
B.A., Newberry College (S.C.); D.D.S., Minnesota, 1906.
- *JOHN PHILIP WENTLING, M.A., Associate Professor of Forestry and Associate Forester, Agricultural Experiment Station
B.A., Franklin and Marshall, 1902; M.A., Franklin and Marshall, 1905.
- FRANK FAIRCHILD WESBROOK, M.A., M.D., C.M., Dean of the College of Medicine and Surgery, Professor of Pathology and Bacteriology, and Director of the Department of Pathology and Bacteriology
B.A., Manitoba, 1887; M.A., M.D., C. M., Manitoba, 1890.
- RODNEY MOTT WEST, B.A., Assistant Professor of Agricultural Chemistry and Assistant Agricultural Chemist, Agricultural Experiment Station
B.A., Minnesota, 1906.
- CHARLES AUGUSTUS WHEATON, M.D., Professor of Surgery, Emeritus
M.D., Harvard Medical School, 1877.
- ALBERT BEEBE WHITE, Ph.D., Professor of History
B.A., Yale, 1893; Ph.D., Yale, 1898.
- SOLON MARX WHITE, B.S., M.D., Associate Professor of Medicine
B.S., Illinois, 1896; M.D., Northwestern, 1897.
- CHARLES ALBERT WIETHOFF, D.D.S., Assistant Professor of Crown and Bridge Work
D.D.S., Minnesota, 1909.

*Absent on leave from September 15, 1912 to March 15, 1913.

- M. RUSSELL WILCOX, M.D., Assistant Professor of Physiology
M.D., Minnesota, 1897.
- NORMAN WILDE, Ph.D., Professor of Philosophy and Psychology, Head
of the Department of Philosophy and Psychology
B.A., Columbia, 1889; M.A., Columbia, 1890; Ph.D., Columbia, 1894.
- HENRY LANE WILLIAMS, B.A., M.D., Director of Athletics, Assistant
Professor of Gynecology
B.A., Yale, 1891; M.D., Pennsylvania, 1895.
- HUGH EVANDER WILLIS, M.A., LL.M., Assistant Professor of Law
B.A., Yankton College, 1897; M.A., Yankton College, 1899; LL.B., Minnesota,
1901; LL.M., Minnesota, 1902.
- ARCHIE DELL WILSON, B.S. in Agr., Chief of Extension Division, and Su-
perintendent of Farmers' Institutes, Department of Agriculture
B.S. in Agr., Minnesota, 1905.
- LOUIS BLANCHARD WILSON, M.D., Assistant Professor of Clinical Path-
ology
M.D., Minnesota, 1896.
- HERBERT WOODROW, Ph.D., Assistant Professor of Psychology
B.A., Michigan, 1904; Ph.D., Columbia, 1909.
- ALBERT FREDERICK WOODS, M.A., Dean and Director of the Department
of Agriculture
B.Sc., Nebraska, 1890; M.A., Nebraska, 1892.
- JAMES BARTON WOOLNOUGH, Lieutenant, 21st Infantry, U.S.A., Pro-
fessor of Military Science and Tactics
West Point, 1904.
- FRANKLIN RANDOLPH WRIGHT, M.D., Clinical Professor of Genito-
urinary Diseases
D.D.S., Minnesota, 1890; M.D., Minnesota, 1894.
- FREDERICK JOHN WULLING, Ph.G., LL.M., Dean of the College of Phar-
macy, Professor of Pharmacology, and Director of the University
Medicinal Plant Gardens
Ph.G., Columbia, 1887; LL.M., Minnesota, 1898.
- JEREMIAH SIMEON YOUNG, Ph.D., Assistant Professor of Political Science
B.A., Kansas College, 1890; M.A., Michigan, 1898; Ph.D., Chicago, 1902.
- ANTHONY ZELENY, Ph.D., Professor of Physics
B.S., Minnesota, 1892; M.S., Minnesota, 1893; Ph.D., Minnesota, 1907.
- JOHN ZELENY, Ph.D., Acting Dean of the Graduate School, Professor
of Physics, Head of the Department of Physics
B.S., Minnesota, 1892; B.A., Cambridge, 1899; Ph.D., Minnesota, 1906.
- OTTO S. ZELNER, B.S., Assistant Professor of Surveying
B.S. in C.E., Michigan, 1905.
- HOWARD STRICKLAND ABBOTT, B.L., Lecturer on Corporation Law
B.L., Minnesota, 1885.
- ROME G. BROWN, B.A., Lecturer on Water Rights
B.A., Harvard, 1884.
- CHARLES WILSON BUNN, B.S., Lecturer on Federal Jurisdiction
B.S., Wisconsin, 1874.

- EDWARD PARIS BURCH, E.E., Professorial Lecturer in Electric Railway Engineering
B.E.E., Minnesota, 1892; E.E., Minnesota, 1898.
- WILLIAM THOMAS COX, B.S. in For., State Forester, Special Lecturer in Forestry
B.S. in For., Minnesota, 1906.
- JOHN PATRICK DEVANEY, LL.M., Professorial Lecturer in charge of Practice Court Work, Night Law School
B.A., Minnesota, 1905; LL.B., Minnesota, 1907; LL.M., Minnesota, 1909.
- HOMER B. DIBELL, B.A., LL.B., Lecturer on Quasi-Contracts
- EDMUND SMITH DURMENT, LL.B., Special Lecturer on Eminent Domain
LL.B., George Washington University, 1884.
- ARTHUR LLEWELLYN HELLIWELL, LL.M., Lecturer on Examinations of Abstracts
B.A., Minnesota, 1895; LL.B., Minnesota, 1896; LL.M., Minnesota, 1898.
- EDWIN HAWLEY HEWITT, B.A., Lecturer on Architecture
B.A., Minnesota, 1896.
- WALDRON MIRTALU JEROME, B.S., LL.B., Professorial Lecturer in charge of the subject of Evidence
B.S., Minnesota, 1900; LL.B., Harvard, 1906.
- FREDERICK KUHLMANN, Ph.D., Professorial Lecturer in Philosophy and Psychology
Ph.D., Clark, 1903.
- HUGH VICTOR MERCER, LL.M., D.C.L., Lecturer on Practice in United States Courts
LL.B., Minnesota, 1894; LL.M., Minnesota, 1897; D.C.L., Minnesota, 1911.
- ADOLPH FREDERICK MEYER, C.E., Professorial Lecturer in Hydraulic Engineering
B.S.C.E., Wisconsin, 1905; C.E., Wisconsin, 1909.
- CHRISTOPHER DILLON O'BRIEN, Lecturer on Criminal Procedure and Practice
- THOMAS DILLON O'BRIEN, Special Lecturer on the Police Power of the State
- JOHN EDGAR RHODES, Special Lecturer on Lumbering
- FREDERICK HAROLD STINCHFIELD, B.A., LL.B., Professorial Lecturer in Practice Court Work
B.A., Bates, 1900; LL.B., Harvard, 1905.
- DILLON PARNELL TIERNEY, M.F., Assistant State Forester, Special Lecturer in Forestry
B.S. in For., Minnesota, 1906; M.F., Yale, 1908.
- DANIEL E. WILLARD, M.A., Special Lecturer, Forest Soils
B.A., Alfred University, 1888; M.A., Alfred University, 1890.
- JOHN WILLEY WILLIS, M.A., Special Lecturer on Lawyers, Ancient, Medieval, and Modern
B.A., Dartmouth, 1877; M.A., Dartmouth, 1880.

INSTRUCTORS

- LINCOLN KEENEY ADKINS, M.S., Instructor in Mathematics
B.A., Nashville, 1905; B.S., Chicago, 1909; M.S., Chicago, 1912.
- WILLIAM F. ALLEN, M.A., Instructor in Histology and Embryology
B.A., Leland Stanford, 1900; M.A., Leland Stanford, 1902.
- CARY OSCAR ALTMAN, M.A., Instructor in Rhetoric
B.A., Otterbein University, 1905; M.A., Ohio State, 1912.
- CLARA L. AUST, B.S. in H.E., Instructor in Domestic Science
B.S. in H.E., Minnesota, 1911.
- ORVILLE GORMAN BABCOCK, B.S., Assistant Entomologist, Agricultural
Experiment Station
B.S., Colorado State Agricultural College, 1910.
- CLYDE HAROLD BAILEY, Instructor in Agricultura' Chemistry, and
Assistant Cereal Technologist, Agricultural Experiment Station
- ALFRED BURPEE BALCOM, M.A., Instructor, Extension Work in Economics
and Political Science
B.S., Acadia (N.S.), 1907; M.A., Harvard, 1909.
- CHARLES RIGGS BALL, B.A., M.D., Clinical Instructor in Nervous and
Mental Diseases
B.A., Ohio Wesleyan, 1891; M.D., Minnesota, 1894.
- MOSES BARRON, B.S., M.D., Instructor in Pathology and Bacteriology
B.S., Minnesota, 1910; M.D., Minnesota, 1911.
- GEORGE C. BARTON, M.D., Clinical Instructor in Gynecology
M.D., Jefferson Medical College, Phila., 1880.
- EDWIN A. BAUMGARTNER, M.A., Instructor in Histology and Embryology
B.A., Kansas, 1910; M.A., Kansas, 1911.
- BESSIE E. BEMIS, B.S., Instructor in Domestic Science
B.S., Michigan Agricultural College, 1905.
- EMIR BEST, B.S. in H.E., Instructor in Domestic Art
B.S. in H.E., Minnesota, 1912.
- FRANK S. BISSELL, M.D., Clinical Instructor in Medicine and Radiog-
rapher, University Hospitals
M.D., Minnesota, 1902; graduate work at Vienna, 1907-8.
- FRANK WALKER BLISS, M.S., Instructor in Chemistry
B.S., Michigan, 1908; M.S., Illinois, 1909.
- OSCAR J. BLOSMO, Ph.C., Instructor in Dispensing, and Pharmacist,
Out-Patient Department, University Hospitals
Ph.C., Minnesota, 1907.
- FANNIE CARD BOUTELLE, Instructor in Domestic Economics, in charge of
Section
- OLIVER BOWLES, M.A., Instructor in Geology
B.A., Toronto, 1907; M.A., Toronto, 1908.
- JESSIE WADLEIGH BOYCE, B.A., Instructor, University Practice School
B.A., Minnesota, 1905.
- WILLARD L. BOYD, D.V.S., Instructor in Veterinary Medicine and Sur-
gery, and Assistant Veterinarian, Agricultural Experiment Station
D.V.S., Kansas City Veterinary College, 1909.

- CHARLES HERBERT BRADLEY, M.D., Clinical Instructor in Medicine
M.D., Northwestern, 1890.
- JOHN B. BRIMHALL, M.D., Clinical Instructor in Orthopedic Surgery
M.D., Pennsylvania.
- RAYMOND WOODARD BRINK, B.S. in E.E., Instructor in Mathematics
and Mechanics
B.S. in Gen. Sci., Kansas State College, 1908; B.S. in E.E., Kansas State College,
1909.
- HAROLD H. BROWN, M.A., Instructor in Chemistry
B.A., Syracuse, 1909; M.A., Syracuse, 1910.
- JOHN BUTLER, M.D., Clinical Instructor in Dermatology
M.D., Minnesota, 1903.
- WILLIAM FINDLAY CANTWELL, B.S. in Chem., Assistant Chemist in
Animal Nutrition, Agricultural Experiment Station
B.S. in Chem., Minnesota, 1911.
- WILLIAM LANE CAVERT, Ph.B., B.S.A., Instructor in Farm Management
Ph.B., Union, 1910; B.S.A., Cornell, 1912.
- ADDIE M. CLARK, Instructor, University Practice School
- EDITH SCHWARTZ CLEMENTS, Ph.D., Instructor in Botany
B.Sc., Nebraska, 1898; Ph.D., Nebraska, 1904.
- HENRIETTE CLOPATH, Instructor in Drawing, in charge of Art Department
Graduate State College, Switzerland, 1885; student, School of Fine Arts, Dresden, 1889; School of Fine Arts, Munich, 1893; Chicago Art Institute, 1898; in Paris, 1909.
- WILFORD OSCAR CLURE, B.A., LL.B., Instructor in Rhetoric
B.A., Drake, 1895; LL.B., Iowa College of Law, 1897.
- MARY LURANE COFFIN, Instructor in Music
Diploma, Public School Music, Columbia School of Music, 1805.
- LILLIAN COHEN, M.S., Instructor in Chemistry
B.S., Minnesota, 1900; M.S., Minnesota, 1901.
- WILLIAM HENRY CONDIT, B.S., M.D., Clinical Instructor in Therapeutics
and Materia Medica
B.S., Minnesota, 1896; M.D., Minnesota, 1899.
- ESTELLE COOK, Instructor in English
Student, Emerson College of Oratory, 1904.
- HENRY WIREMAN COOK, B.A., M.D., Clinical Instructor in Medicine
B.A., Johns Hopkins, 1898; M.D., Johns Hopkins, 1902.
- PAUL BURNS COOK, M.D., Instructor in Genito-urinary Diseases
M.D., Minnesota, 1900.
- OSCAR COOPERMAN, D.D.S., Instructor in Prosthetic Dentistry
D.D.S., Minnesota, 1911.
- FRANCIS ALEXANDER CORNIEA, B.S. in Agr., Instructor in Farm Management
B.S. in Agr., Minnesota, 1911.
- RALPH W. COUNTRYMAN, D.D.S., Instructor in Operative Dentistry
D.D.S., Minnesota, 1908.
- LESLIE O. DART, M.D., Clinical Instructor in Pediatrics
M.D., Minnesota, 1901.

- JAMES DAVIES, Ph.D., Instructor in German
Ph.B., Boston, 1900; M.A., Boston, 1905; Ph.D., Leipzig, 1906.
- EDWARD WILSON DAVIS, B.S. in E.E., Instructor in Mechanics and Mathematics
B.S. in E.E., Purdue, 1911.
- RENE M. DELAMARE, B.L., Instructor in French
Bachelier Lettres-Philosophie, Sorbonne (Paris), 1897.
- GRACE ELLA DENNY, B.S., Instructor in Physical Training
B.S., Columbia.
- FRANCIS WARREN DUNBAR, D.D.S., Instructor in Operative Dentistry
D.D.S., Minnesota, 1910.
- ELEANOR GRACE EATON, B.A., Instructor in English
B.A., Mt. Holyoke, 1908.
- KARL C. EBERLY, M.D., Instructor in Physiology
M.D., Michigan, 1912.
- AUSTIN SOUTHWICK EDWARDS, Ph.D., Instructor in Psychology
B.S., Columbia, 1908; M.A., Minnesota, 1910; Ph.D., Cornell, 1912.
- AGNES ERICSON, Assistant Chemist in Animal Nutrition, Agricultural Experiment Station
Minnesota School of Agriculture, 1902.
- ADDISON LUTHER EWING, M.S., Instructor in School Physics
B.S., Cornell, 1880; M.S., Cornell, 1886.
- ROBERT EMMETT FARR, M.D., Clinical Instructor in Surgery
M.D., Rush Medical College, 1900.
- EARL LOYD FINNEY, Instructor in Farm Mathematics
- CARL OSCAR FLAGSTAD, D.D.S., Instructor in Prosthetic Dentistry
D.D.S., Minnesota, 1911.
- WILLIAM KERR FOSTER, LL.M., Assistant Director of Gymnasium
LL.B., Minnesota, 1908; LL.M., Minnesota, 1909.
- JENNESS BOUGHTON FREAR, M.E., Instructor in Mechanics and Assistant Agricultural Engineer, Agricultural Experiment Station
M.E., Minnesota, 1910.
- ROBERT WILTON FRENCH, B.S., Instructor in Drawing
B.S. (Civil Engineering), Michigan, 1907.
- PHYLLIS FRYE, Instructor in Domestic Art
- JOHN THEODORE GEISSENDOERFER, Ph.D., Instructor in German
B.A., Wisconsin, 1907; Ph.D., Pennsylvania, 1912.
- EMIL SEBASTIAN THOMAS GEIST, M.D., Clinical Instructor in Orthopedics
M.D., Minnesota, 1900.
- HALDOR B. GISLASON, B.A., LL.B., Instructor in Rhetoric
B.A., Minnesota, 1900; LL.B., Minnesota, 1904.
- HARRIET IRENE GOLDSTEIN, Instructor in Drawing
Student, Chicago Art Institute and Chicago Art Academy and pupil of Vanderpoel, Millet, Martha S. Baker, J. Francis Smith, 1899-1904.
- WILLIAM GRANT GRAVES, B.A., LL.B., Instructor in Law
B.A., Harvard, 1906; LL.B., Harvard, 1909.

- WILLIAM FARNSWORTH HAGERMAN, B.S. in Agr., Instructor in Animal Husbandry and Assistant Animal Husbandman, Agricultural Experiment Station
B.S. in Agr., Minnesota, 1912.
- JOHN ABNER HANDY, Ph.C., B.S., Instructor in Pharmaceutical Chemistry
Ph.C., Minnesota, 1906; B.S., Minnesota, 1911.
- EDWIN OLAF HANSON, Instructor in Dairy Husbandry and Assistant in Dairy Husbandry, Agricultural Experiment Station
- EARLE RUSSELL HARE, B.A., M.D., Clinical Instructor in Surgery
B.A., Iowa Wesleyan, 1894; M.D., Minnesota, 1900.
- E. ALICE HARMAN, B.S., Instructor in Domestic Science
B.S., Pennsylvania State College, 1910.
- MARY V. HARTZELL, D.M.D., Instructor in Comparative Dental Anatomy
D.M.D., Minnesota, 1893.
- ELIZABETH HAUSE, B.A., Instructor in English
B.A., Michigan.
- PEDER A. HOFF, M.D., Clinical Instructor in Medicine
M.D., Minnesota, 1900.
- LILLIAN BAUER HOLLINSHEAD, Instructor in Farm Accounts
- WILLIAM FRANK HOLMAN, Ph.D., Instructor in Mathematics
B.Sc., Nebraska, 1904; M.A., Nebraska, 1906; Ph.D., Göttingen, 1908.
- CHARLES MEAD HOLT, B.A., Instructor in Technique of Reading and Voice Culture
B.A., Minnesota, 1905.
- THOMAS JAMES HORTON, Photographer, in Charge of Photographic Laboratory, Agricultural Experiment Station
- HORACE PRESTON HOSKINS, V.M.D., Instructor in Veterinary Science and Assistant Veterinarian, Agricultural Experiment Station
V.M.D., Pennsylvania, 1910.
- CHARLES WALTER HOWARD, B.A., Instructor in Entomology and Assistant Entomologist, Agricultural Experiment Station
B.A., Cornell, 1904.
- DE FOREST HUNGERFORD, B.S., Instructor in Soils and Assistant Soils Chemist, Agricultural Experiment Station
B.S., Kansas State Agricultural College, 1910.
- WILLIAM HAMMETT HUNTER, Ph.D., Instructor in Chemistry
B.A., Harvard, 1904; M.A., Harvard, 1905; Ph.D., Harvard, 1910.
- JOHN ELDON HYNES, Ph.C., M.D., Clinical Instructor in Medicine and Assistant in Clinical Microscopy
Ph.C., Minnesota, 1900; M.D., Minnesota, 1904.
- HARRY GARFIELD IRVINE, M.D., Clinical Instructor in Dermatology and Syphilology
M.D., Minnesota, 1903.
- CHARLES EUGENE JOHNSON, Ph.D., Instructor in Comparative Anatomy of Vertebrates
B.A., Minnesota, 1906; M.A., Minnesota, 1907; Ph.D., Minnesota, 1912.
- IDA PETRINE JOHNSON, M.A., Instructor in German
B.A., Wisconsin, 1906; M.A., Wisconsin, 1912.

- WILLIAM CLINTON JOHNSON, B.A., M.D., Demonstrator in Pathology and Bacteriology
B.A., Williams, 1905; M.D., Columbia, 1909.
- A. WALFRED JOHNSTON, M.A., Instructor in Geology
B.A., Augustana, 1908; M.A., Minnesota, 1909.
- ALLEN DAVIDSON JOHNSTON, Instructor in Blacksmithing
- HERBERT WILLIAM JONES, M.D., Clinical Instructor in Mental and Nervous Diseases
M.D., Minnesota, 1901.
- LAURA FRANCIS KENDALL, Instructor in Public School Music
- CORNELIA KENNEDY, B.A., Instructor in Agricultural Chemistry and Assistant in Chemistry, Agricultural Experiment Station
B.A., Minnesota, 1903.
- RAY ROBERTS KNIGHT, B.A., M.D., Instructor in the Administration of Anaesthetics
B.A., Minnesota, 1903; M.D., Minnesota, 1906.
- ALFRED EDMUND KOENIG, M.A., Instructor in German
B.A., Redfield College, 1906; M.A., Minnesota, 1910; D.D., Western Evangelical Seminary, 1910.
- GEORGE FRED KROGH, Draftsman, Agricultural Experiment Station
- MASAJI KUGIMOTO, M.S., Assistant in Animal Husbandry, Agricultural Experiment Station
Tokyo Imperial University, 1908; M.S., Minnesota, 1912.
- DWIGHT JUDSON LANE, Instructor in Poultry Husbandry and Assistant in Poultry Husbandry, Agricultural Experiment Station
- HAROLD JUDSON LEONARD, D.D.S., Instructor in Operative Dentistry
D.D.S., Minnesota, 1912.
- LOIS DOROTHY LOYHED, B.A., Instructor in English
B.A., Minnesota, 1912.
- LAURA MCARTHUR, Instructor in Domestic Art
- OLIVE BRIGGS MACCOMBER, Instructor in Domestic Art
- CHARLES NAUMANN MCCLOUD, M.D., Clinical Instructor in Pediatrics, Lecturer on First Aids to the Injured
Phm.D., Minnesota, 1895; M.D., Minnesota, 1901.
- ERVIN W. MCCULLOUGH, E.M., Instructor in Mining
E.M., Minnesota, 1911.
- WILLIAM MCDougALL, D.D.S., Instructor in Crown and Bridge Work
D.D.S., Minnesota, 1911.
- LOUIS WILLIAMS MCKEEHAN, Ph.D., Instructor in Physics
B.S. in Eng., Minnesota, 1908; M.S., Minnesota, 1909; Ph.D., Minnesota, 1911.
- JENNETTE MATILDA McLAREN, M.D., Clinical Instructor in Obstetrics
M.D., Michigan, 1887.
- FRANKLIN R. McMILLAN, C.E., Instructor in Experimental Engineering
C.E., Minnesota, 1905.
- PAUL RAYMOND McMILLER, B.S. in Chem., Assistant in Chemistry, Agricultural Experiment Station
B.S. in Chem., Minnesota, 1911.

- GUSTAF ALFRED MAGNUSSON, B.A., M.D., Demonstrator in Pathology and Bacteriology
B.A., New Mexico, 1903; M.D., Minnesota, 1908.
- JAMES WILHELM MALAND, D.D.S., Instructor in Crown and Bridge Work
D.D.S., Minnesota, 1910.
- JOHN W. MARDEN, M.S., Instructor in Chemistry
B.S., Illinois Wesleyan, 1909; M.S., New York University, 1911.
- WALLACE HOPE MARTIN, M.E., Instructor in Mechanical Engineering
M.E., Minnesota, 1910.
- CHARLES HAROLD MATTHEWS, Assistant in Poultry Husbandry, Agricultural Experiment Station
- RICHARD SAMUEL MAYBURY, D.D.S., Instructor in Operative Dentistry
D.D.S., Minnesota, 1911.
- CHARLES J. MEADE, M.D., Clinical Instructor in Medicine
M.D., McGill, 1892.
- CARL MARCUS MELOM, M.A., Instructor in Spanish
B.L., Minnesota, 1901; M.A., Minnesota, 1902; graduate work in University of France, 1903-4.
- ALICE MARGARET MERSEN, B.A., Instructor in Agricultural Chemistry
B.A., Minnesota, 1904.
- LEON METZINGER, Ph.B., Instructor in German
Ph.B., Chicago, 1908.
- JAMES STEPHEN MIKESH, B.A., Instructor in Mathematics
B.A., Minnesota, 1908.
- D. C. MITCHELL, B.Sc. in C.E., Instructor in Physical Training
B.Sc. in C.E., Nebraska, 1910.
- MARTHA B. MOORHEAD, M.D., Instructor in Hygiene
M.D., Woman's Medical College of Pennsylvania, 1892.
- JOHN HINCKLEY MORSE, B.A., M.D., Clinical Instructor in Ophthalmology and Otology
B.A., Bowdoin, 1897; M.D., Harvard, 1901.
- AGNES MORTON, B.S. in H.E., Instructor in Domestic Science
- ALICE JANE RIPLEY MOTT, Ph.D., Principal of the University Practice School
B.L., Iowa, 1893; M.A., Iowa, 1894; Ph.D., Minnesota, 1900.
- LOUIS ALLAN NELSON, M.D., Clinical Instructor in Ophthalmology and Otology
M.D., Minnesota, 1896.
- EDMUND NEWTON, E.M., Instructor in Metallurgy
E.M., Columbia, 1911.
- HENRY T. NIPPERT, M.D., Clinical Instructor in Medicine
Ph.G., Cincinnati, 1889; M.D., Miami Medical College, 1891.
- MARK LEWIS NORMAN, D.D.S., Instructor in Operative Dentistry
D.D.S., Minnesota, 1912.
- GEORGE NORTON NORTHROP, M.A., Instructor in English
B.L., Minnesota, 1901; M.A., Minnesota, 1907.
- LILLIAN LYDIA NYE, M.A., Instructor in Chemistry
B.A., Minnesota, 1909; M.A., Minnesota, 1910.

- OSCAR OWRE, M.D., C.M., Clinical Instructor in Genito-urinary Diseases
M.D., C.M., Minneapolis College of Physicians and Surgeons, 1903.
- JOHN IRA PARCEL, B.S., Instructor in Structural Engineering
B.A., Westfield College, 1903; B.S. (Civil Engineering), University of Illinois, 1909.
- LUTHER WOOD PARKER, M.A., Instructor in French
B.A., North Carolina, 1907; M.A., North Carolina, 1908.
- MARK OTIS PATTRIDGE, D.D.S., Instructor in Operative Dentistry
D.D.S., Minnesota, 1910.
- DELILAH PEARCE, G.N., Instructor in Home Nursing
- FRANCIS WINFRED PECK, B.S. in Agr., Instructor in Farm Management and Assistant Agriculturist, Agricultural Experiment Station
B.S. in Agr., Minnesota, 1912.
- PETER E. PETERSON, Instructor in Foundry Practice
- CARL HALMER PETRI, D.D.S., Instructor in Prosthetic Dentistry
D.D.S., Minnesota, 1910.
- CHAUNCEY J. VALLETTE PETTIBONE, B.S., Instructor in Physiology
B.S., Chicago, 1907.
- EARL PETTIJOHN, M.S., Instructor in Chemistry
B.A., Minnesota, 1906; B.S. (Chemistry), Minnesota, 1911; M.S., Minnesota, 1912.
- ANNA AUGUSTA HELMHOLTZ-PHELAN, Ph.D., Instructor in Rhetoric
B.A., Wisconsin, 1905; M.A., Wisconsin, 1906; Ph.D., Wisconsin, 1908.
- RAYMOND VINCENT PHELAN, Ph.D., Instructor, Extension Work in Economics
Ph.B., Western Reserve, 1902; M.A., Western Reserve, 1904; Ph.D., Wisconsin, 1906.
- RUTH SHEPARD PHELPS, M.A., Instructor in Italian
B.L., Smith, 1899; M.A., Columbia, 1910.
- ELLA CLARE PINE, B.S., Instructor in Domestic Science
B.S. in Educ., Vermont, 1911.
- LEE WESLEY POLLOCK, B.S., M.D., Demonstrator in Pathology and Bacteriology
B.S., Minnesota, 1911; M.D., Minnesota, 1912.
- FREDERICK HAROLD POPPE, B.A., M.D., Clinical Instructor in Surgery
B.A., Minnesota, 1904; M.D., Minnesota, 1907.
- FREDERICK WILLIAM POPPE, M.S., Instructor in Chemistry
B.A., Lawrence (Wis.) College, 1910; M.S., Minnesota, 1911.
- WARREN THOMSON POWELL, M.A., Instructor in Rhetoric
B.A., Ohio, 1907; M.A., Ohio, 1911.
- CHARLES HERBERT PRESTON, B.A., Instructor, Extension Work in Economics and Political Science
B.A., Wisconsin, 1906.
- GEORGE C. PRIESTER, B.E., Instructor in Mathematics
B.E., Iowa, 1910.
- EDWARD P. QUIGLEY, Instructor in Forge Work
- CARL LEO RAHN, Ph.B., Instructor in Psychology
Ph.B., Chicago, 1907.

CHARLES ANTHONY REED, B.S., M.D., Clinical Instructor in Orthopedic Surgery
B.S., Minnesota, 1895; M.D., Minnesota, 1898.

GEORGE WESTFALL REYNOLDS, D.D.S., Instructor in Crown and Bridge Work
D.D.S., Minnesota, 1910.

MAUDE BESSIE RICE, B.S. in H.E., Instructor in Domestic Art
B.S. in H.E., Minnesota, 1911.

ERNEST THOMSON FRASER RICHARDS, M.D., Clinical Instructor in Medicine
M.D., McGill, 1905.

WILLIAM HENRY RICHARDS, Instructor in Carpentry and Pattern Work

LOUIS SYDNEY BASSFORD ROBINSON, B.A., M.D., Clinical Instructor in Obstetrics
B.A., Harvard, 1897; M.D., Harvard, 1901.

WILLIAM A. ROLL, D.D.S., Instructor in Crown and Bridge Work
D.D.S., Minnesota, 1911.

BERT AARON ROSE, Instructor of Cadet Band

FRANK BENJAMIN ROWLEY, M.E., Instructor in Drawing and Descriptive Geometry
B.S., Wisconsin, 1905; M.E., Wisconsin, 1906.

CHARLES EUGENE RUDOLPH, D.D.S., Instructor in Prosthetic Dentistry
D.D.S., Minnesota, 1911.

JAMES COX SANDERSON, Ph.D., Instructor in Physics
B.A., Yale, 1907; Ph.D., Yale, 1911.

FREDERIC WILLIAM SCHLUTZ, B.A., M.D., Research Associate in Physiologic Chemistry
B.A., Wartburg College, 1898; M.D., Maryland, 1902.

THEOPHILUS HENRY SCHROEDEL, B.A., Instructor in German
B.A., Northwestern College, 1902.

FLORENCE MABEL SECOR, B.S., Instructor in Domestic Art
B.S., Iowa State College, 1908.

JOSEPH FREDERICK SHELLMAN, D.D.S., Instructor in Operative Dentistry
D.D.S., Minnesota, 1905.

CHARLES EVERETT SKINNER, M.A., Instructor in Rhetoric
B.L., Michigan; M.A., Michigan.

HERMON LESTER SLOBIN, Ph.D., Instructor in Mathematics
B.A., Clark College, 1905; Ph.D., Clark University, 1908.

GRETA EULALIE SMITH, Instructor in Domestic Art

*EDGAR KIRKE SOPER, B.A., Instructor in Geology
B.A., Leland Stanford, 1908.

CHARLES NELSON SPRATT, B.S., M.D., Clinical Instructor in Ophthalmology and Otology
B.S., Minnesota, 1897; M.D., Johns Hopkins, 1901.

*On leave of absence from November 1, 1912 to August 1, 1913.

- ELVIN CHARLES STAKMAN, M.A., Instructor in Plant Pathology and Assistant Plant Pathologist and Bacteriologist, Agricultural Experiment Station
B.A., Minnesota, 1906; M.A., Minnesota, 1910.
- WOLDEMAR MARCOVITCH STERNBERG, B.S. in Chem. Eng., Instructor in Chemistry
B.S. in Chem. Eng., Institute of Technology, St. Petersburg, Russia, 1907.
- ARTHUR CLARENCE STRACHAUER, M.D., Clinical Instructor in Surgery
M.D., Minnesota, 1908.
- THOMAS W. STUMM, M.D., Clinical Instructor in Medicine
M.D., Rush Medical College, 1901.
- SAMUEL EDWARD SWEITZER, M.D., Clinical Instructor in Dermatology and Genito-urinary Diseases
M.D., Minnesota, 1901.
- STERLING TEMPLE, M.A., Instructor in Chemistry
B.A., Hamline University, 1905; M.A., Hamline University, 1906.
- WILCOX GEORGE THORNE, M.D., Demonstrator in Pathology and Bacteriology
M.D., Washington University, 1910.
- LOUIS LEON THURSTONE, M.E., Instructor in Drawing and Descriptive Geometry
M.E., Cornell, 1912.
- HUBERT MICHAEL TURNER, B.S., Instructor in Electrical Engineering
B.S., Illinois, 1910.
- HENRY JOHN UBRICH, Instructor in Carpentry
- HENRY LUDWIG ULRICH, B.S., M.D., Clinical Instructor in Medicine
B.S., Rutgers, 1897; M.D., Johns Hopkins, 1901.
- VICTOR NELSON VALGREN, M.A., Instructor in Economics
B.A., Gustavus Adolphus College, 1905; M.A., Minnesota, 1909.
- LEWIS BROSIUS WALTON, B.S. in Arch., Instructor in Architecture
B.S. in Arch., Pennsylvania, 1912.
- KENNETH FISHER WARNER, B.A., Instructor in Animal Husbandry and Assistant in Animal Husbandry, Agricultural Experiment Station
B.A., Nebraska, 1912.
- ANDREW JOSEPH WEISS, Instructor in Technics
- HENRY JOURNEY WELLES, M.D., Clinical Instructor in Ophthalmology and Otology
M.D., Minnesota, 1901.
- MARGARET WEST, B.A., Instructor, University Practice School
B.A., Minnesota, 1907.
- HALL BREWER WHITE, B.S. in Agr., Instructor in Carpentry
B.S. in Agr., Minnesota, 1908.
- HELEN ARDELL WHITNEY, M.A., Instructor in Rhetoric
B.A., Minnesota, 1900; M.A., Minnesota, 1909.
- LLOYD ROBERT WHITSON, E.M., Instructor in Drawing
E.M., Minnesota, 1911.
- ARCHA EDWARD WILCOX, M.D., Clinical Instructor in Surgery
M.D., Pennsylvania, 1899.

- LOUIS EARL WILLEY, D.V.M., Assistant Veterinarian, Agricultural Experiment Station
D.V.M., Iowa State College, 1911.
- WARREN WILLIAMSON, M.A., Assistant Entomologist, Agricultural Experiment Station
B.A., Knox College, 1897; M.A., Illinois, 1911.
- ROBERT WILSON, B.S. in For., Instructor in Entomology
B.S. in For., Minnesota, 1912.
- RICHARD WISCHKAEMPER, M.A., Instructor in German
B.A., Wartburg College, 1901; M.A., Iowa, 1908.
- CHARLES BENJAMIN WRIGHT, B.A., M.D., Clinical Instructor in Pediatrics
B.A., North Dakota, 1898; M.D., Johns Hopkins, 1902.
- ARTHUR ADALBERT ZIEROLD, D.D.S., Instructor in Oral Surgery
D.D.S., Minnesota, 1907.
- GEORGE JACOB BAKER, M.S., District Agricultural Director of County Work, Agricultural Extension
B.S. in Agr., Minnesota, 1909; M.S., Minnesota, 1910.
- MARGARET S. BAKER, Home Economics, Agricultural Extension
- CHARLES EDGAR BROWN, Expert, Demonstration Farm Work, Agricultural Extension
- MARY L. BULL, Home Economics, Agricultural Extension
- NORTON EVERETT CHAPMAN, M.A., Poultry Expert, Agricultural Extension
B.A., Chicago, 1885; M.A., Denison, 1888.
- CHARLES FREMONT DIGHT, M.D., Lecturer in Pharmacology and Materia Medica
M.D., Michigan, 1879.
- THEODORE AUGUST ERICKSON, B.A., Rural School Specialist
B.A., Minnesota, 1904.
- GEORGE FRANKLIN HOWARD, Rural School Specialist, Agricultural Extension
- K. A. KIRKPATRICK, B.S.A., Horticulturist, Agricultural Extension
B.S.A., Iowa State College, 1909.
- DON DIVANCE LESCHIER, M.A., Special Lecturer in Economics
B.A., Albion College, 1905; M.A., Albion College, 1907.
- WILLIAM ARCHIE MCKERROW, Live Stock Specialist, Agricultural Extension
- HENRY SEWALL MITCHELL, B.A., LL.B., Instructor in Contracts, University Extension Division
B.A., Minnesota, 1905; LL.B., Minnesota, 1909.
- OSCAR M. OLSON, Director of Demonstration Farms, Agricultural Extension
- G. W. PATTERSON, Assistant in Rural School Work.

FELLOWS, SCHOLARS, AND ASSISTANTS

ARNY AAMODT, Student Instructor in Horticulture

EDMUND WHITNEY ALGER, M.D., Temporary Clinical Assistant in Medicine
M.D., Minnesota, 1902.

OLAF BANG ANDERSEN, Student Assistant in Education

JOHN MILTON ARMSTRONG, M.D., Clinical Assistant in Genito-urinary Diseases
M.D., Minnesota, 1901.

SEILER JOSEPH ASPELUND, B.A., M.D., Clinical Assistant in Obstetrics and Gynecology
B.A., Luther College, 1901; M.D., Minnesota, 1906.

WILLIAM HENRY AURAND, M.D., Clinical Assistant in Medicine
M.D., Minnesota, 1901.

ERNEST LAVERNE BAKER, M.D., Clinical Assistant in Medicine
M.D., Minnesota, 1909.

WALTER S. BEACH, Scholar in Botany

WILLIAM DAVID BEADIE, M.D., C.M., Clinical Assistant in Pediatrics
M.D., C.M., McGill, 1900.

LEO P. BELL, Student Assistant in Anatomy

CORINNE BLISS, Scholar in Rhetoric and Public Speaking

CLIFTON A. BOREEN, B.S., M.D., Clinical Assistant in Dermatology
B.S., Minnesota, 1907; M.D., Minnesota, 1909.

HOMER WILTSIE BORST, B.A., Scholar in Sociology and Anthropology
B.A., Minnesota, 1912.

ELWYN R. BRAY, B.A., M.D., Clinical Assistant in Ophthalmology and Otology
B.A., Minnesota, 1903; M.D., Minnesota, 1906.

MARK WILDER BRAY, B.A., Assistant in Chemistry
B.A., Lawrence College, 1912.

LEVERETT DALE BRISTOL, B.S., M.D., Clinical Assistant in Medicine
B.S., Wesleyan (Conn.), 1903; M.D., Johns Hopkins, 1907.

PAUL FRANCIS BROWN, B.A., M.D., Clinical Assistant in Surgery
B.A., Minnesota, 1902; M.D., Minnesota, 1905.

OLIVER R. BRYANT, M.D., Clinical Assistant in Medicine
M.D., Minnesota, 1905.

ARTHUR CHRISTIAN BURKHARD, M.A., Assistant in German
B.A., Minnesota, 1911; M.A., Minnesota, 1912.

WALTER EDWARD CAMP, B.A., Student Assistant in Anatomy
B.A., Missouri, 1912.

HARRY E. CANFIELD, M.D., Clinical Assistant in Ophthalmology and Otology
M.D., Minnesota, 1906.

ELIZABETH CAREY, B.A., Scholar in Rhetoric and Public Speaking
B.A., Minnesota, 1911.

ROYAL N. CHAPMAN, Scholar in Animal Biology

- LYDIA BERTHA CHRIST, B.A., Scholar in Geology and Mineralogy
B.A., Minnesota, 1912.
- GROVER M. CONZET, B.S. in For., Shevlin Fellow in Agriculture
B.S. in For., Minnesota, 1912.
- GEORGE CUTTS, M.D., Clinical Assistant in Medicine
M.D., Minnesota, 1907.
- ELMER ANSON DANIELS, B.S. in Chem., Assistant in Chemistry
B.S. in Chem., Minnesota, 1912.
- CONRAD DAVIS, Student Assistant in Agricultural Engineering
- GRACE ORPHA DAVIS, B.A., Scholar in English
B.A., Minnesota, 1912.
- ARTHUR CUMMINGS DENNIS, B.A., Assistant in Chemistry
B.A., Minnesota, 1912.
- HOMER ALEXANDER DESMARAIS, B.A., Assistant in French
B.A., Petit Seminaire de Montreal, 1907; Ph.B., St. Paul Seminary, 1909.
- HARRY W. DIXON, Assistant in Power Plant Operation
- CECIL W. DOHERTY, Student Helper in Chemistry
- ZOE DONALDSON, B.A., Scholar in Rhetoric and Public Speaking
B.A., Minnesota, 1912.
- KATHERINE MELVINA DOWNEY, B.A., Scholar in Mathematics
B.A., Minnesota, 1910.
- ALICE FITZGERALD DRECHSLER, B.A., Scholar in German
B.A., Minnesota, 1912.
- JUNIUS DAVID EDWARDS, B.S., Assistant in Chemistry
B.S., Minnesota, 1912.
- VICTOR LEONARD ERICKSON, B.A., Scholar in Economics
B.A., Minnesota, 1912.
- RUTH ERICKSON, B.A., Theme Clerk in Department of Rhetoric
B.A., Minnesota, 1911.
- DONALD FOLSOM, B.A., Assistant in Botany
B.A., Nebraska, 1912.
- HUBERT FOURNIER, Attendant in Physical Training for Men
- CHARLES DONEY FREEMAN, M.D., Clinical Assistant in Dermatology and
Venereal Diseases
M.D., Minnesota, 1904.
- DONALD FERGUSON, B.A., Assistant in Music
B.A., Wisconsin, 1904.
- GRACE W. GANSSE, B.A., Scholar in Rhetoric
B.A., Minnesota, 1912.
- ALFRED W. GAUGER, Student Helper in Chemistry
- JAMES WOODWARD GEORGE, B.S., M.D., Clinical Assistant in Obstetrics
B.S., Minnesota, 1896; M.D., Minnesota, 1902.
- MILTON M. GOLDSTEIN, B.S., Assistant in Chemistry
B.S., Minnesota, 1912.
- EDWARD VINCENT GOLTZ, M.D., Clinical Assistant in Rhinology and
Laryngology
M.D., Northwestern, 1908.

- EUGENE KIBBEY GREEN, B.A., M.D., Associate in Anatomy
B.A., Minnesota, 1895; M.D., Minnesota, 1903.
- ERNEST MARTIN HAMMES, M.D., Clinical Assistant in Nervous and
Mental Diseases
M.D., Minnesota, 1906.
- JAMES FELTON HAMMOND, M.D., C.M., Clinical Assistant in Pediatrics
M.D., C.M., McGill, 1906.
- HAROLD N. HANSEN, Assistant in Animal Biology
- PAUL HARDT, Student Helper in Chemistry
- GEORGE LEAVITT HARRINGTON, E.M., Assistant in Geology and Miner-
alogy
E.M., Minnesota, 1912.
- JUNIOR HAYDEN, Scholar in Physics
- RUTH ELIZABETH HERMANN, M.A., Assistant in Animal Biology
B.A. in Educ., Minnesota, 1911; M.A., Minnesota, 1912.
- JENS H. HJELMSTAD, Scholar in Scandinavian
- EDWIN T. HODGE, Scholar in Geology and Mineralogy
- WILLIAM W. HODSON, Scholar in Sociology and Anthropology
- HENRY JOSEPH HOFFMANN, B.S. in Chem., Assistant in Chemistry
B.S. in Chem., Minnesota, 1912.
- ELMER RAY HOSKINS, B.A., Student Assistant in Anatomy
B.A., Kansas, 1912.
- EDGAR JOHN HUENEKENS, B.A., M.D., Clinical Assistant in Medicine
B.A., Marquette College, 1904; M.D., St. Louis, 1908.
- ROY HUTCHINSON, Student Assistant in Pharmacy
- LOUISE ESTELLE JENSEN, M.A., Scholar in Botany
B.A., Minnesota, 1909; M.A., Smith, 1910.
- ALBERT EUGENE JOHANN, B.A., M.D., Assistant in Pediatrics
B.A., Christian University (Canton, Mo.), 1906; M.D., Johns Hopkins, 1910.
- HENRY JOHN, M.A., Shevlin Fellow in Medicine
B.A., Kansas, 1911; M.A., Minnesota, 1912.
- E. MENDELSSOHN JONES, M.D., Clinical Assistant in Surgery
M.D., Minnesota, 1907.
- GRIFFITH MOSES JONES, M.D., Assistant in Gynecology
M.D., Illinois, 1905.
- NOAH W. JOHNSTONE, Attendant in Physical Training for Men
- ETHELEEN FRANCES KEMP, M.A., Shevlin Fellow in Science, Literature,
and the Arts
B.A., Minnesota, 1910; M.A., Minnesota, 1911.
- HERBERT ARTHUR KERN, Student Helper in Chemistry
- HARRY DEXTER KITSON, B.A., Scholar in Philosophy and Psychology
B.A., Hiram College, 1909.
- PAUL E. KLOPSTEG, B.S., Assistant in Physics
B.S., Minnesota, 1911.
- ZERAH PUTNAM KING, Student Assistant in Physiology
- WOLF KRITCHEVSKY, D.Sc., Research Assistant in Chemistry
Docteur es Sciences, University of Grenoble.

GURID LAATE, B.S. in H.E., Assistant in Domestic Science
B.S. in H.E., Minnesota, 1910.

ANTOINE A. LAURENT, M.D., Clinical Assistant in Diseases of Children
M.D., Hamline, 1911.

RAE THORNTON LA VAKE, B.A., M.D., Temporary Assistant in Pediatrics
and Associate in Anatomy
B.A., Yale, 1905; M.D., Columbia, 1909.

FRANK MAURY LEAVENWORTH, B.S. in Chem., Assistant in School of
Mines Experiment Station
B.S. in Chem., Minnesota, 1911.

AMMY LEMSTROM, Scholar in Romance Languages

ADOLPH EDWARD LOBERG, M.D., Clinical Assistant in Nervous and
Mental Diseases
M.D., Minnesota, 1901.

FRANCES LOUISE LONG, B.A., Scholar in Botany
B.A., B.S., Nebraska, 1906.

HYME LOSSE, B.A., Assistant in French
B.A., Minnesota, 1910.

LILIAN B. LYFORD, Assistant in Physical Education for Women

MARIE CAROLINE LYLE, M.A., Scholar in English
B.A., Minnesota, 1911; M.A., Minnesota, 1912.

HENRY LYSNE, B.S., M.D., Clinical Assistant in Medicine
B.S., St. Olaf, 1906; M.D., Minnesota, 1910.

CHARLES MCCARTY, Assistant on Tax Commission Work, School of
Mines Experiment Station

CHARLES ALBERT MANEY, Scholar in Astronomy

LYNN ULMER MARTIN, E.M., Scholar in Geology and Mineralogy
E.M., Minnesota, 1912.

GUY CLIFTON MENEFEE, B.A., Scholar in Philosophy and Psychology
B.A., Minnesota, 1912.

LEE MILLER, Assistant in Agricultural Engineering

ALBERTIS MONTGOMERY, Scholar in Physics

EDWARD MOREN, M.D., Clinical Assistant in Medicine
M.D., Minnesota, 1906.

ANGUS WASHBURN MORRISON, B.A., M.D., Clinical Assistant in Nervous
and Mental Diseases
B.A., Yale, 1906; M.D., Johns Hopkins, 1910.

ADOLPH H. NIETZ, Student Helper in Chemistry

GEORGE SHIKATARO NISHIHARA, B.S., Scholar in Geology and Mineralogy
B.S., Arizona, 1912.

EVERETT W. NORCROSS, Student Assistant in Botany

EDWIN OFSTIE, Assistant in Mechanical Engineering

FREDERICK ADOLPH OLSON, B.A., M.D., Research Assistant in Medicine
B.A., Minnesota, 1905; M.D., Chicago, 1908.

MATTHIAS NORDBERG OLSON, M.A., LL.B., Albert Howard Scholar
B.A., Minnesota, 1908; M.A., Minnesota, 1909; LL.B., Minnesota, 1912.

CARL F. OTTO, Student Assistant in Dentistry

BENJAMIN WHIPPLE PALMER, B.A., Scholar in Political Science
B.A., Minnesota, 1911.

JOHN H. PARKER, Student Instructor in Botany

GEORGE PEAKE, Student Assistant in Entomology

ARTHUR HAWLEY PARMELEE, B.A., M.D., Clinical Assistant in Medicine
B.A., Beloit, 1905; M.D., Rush Medical College, 1911.

REUBEN MARTIN PEDERSON, B.A., M.D., Temporary Assistant in Genito-
Urinary Diseases
B.A., Augsburg, 1902; M.D., Minnesota, 1906.

ALFRED G. PERKINS, Student Instructor in Horticulture

EVELYN M. PETERSON, Student Helper in Botany

HENRY PETERSON, Student Helper in Chemistry

R. MAYNARD PETERSON, Student Instructor in Horticulture

GERALD PLAISANCE, Student Helper in Animal Biology

RALPH ELMER PORTER, Student Helper in Chemistry

FRED JOHN PRATT, M.D., Clinical Assistant in Ophthalmology and
Otology
M.D., Michigan, 1901.

JOSEPH A. PRIM, B.A., M.D., Clinical Assistant in Medicine
B.A., Gustavus Adolphus College, 1895; M.D., Minnesota, 1899.

FRANCES HELEN RELF, M.A., Assistant in History, in charge of Historical
Laboratory
B.A. in Educ., Minnesota, 1911; M.A., Minnesota, 1912.

VERA SARAH REYNOLDS, B.A., Scholar in History
B.A., Albion College, 1905.

ADOLPH RINGOEN, B.A., Assistant in Animal Biology
B.A., Iowa, 1909.

SARA T. RIVET, Scholar in Botany

CHARLES LE ROY RODGERS, M.D., Clinical Assistant in Obstetrics
M.D., Minnesota, 1907.

ETHEL ROGERS, Student Assistant in Domestic Art

STANLEY ISRAEL RYPINS, B.A., Scholar in Rhetoric
B.A., Minnesota, 1912.

HELEN ATHERTON SANBORN, B.A., Assistant in Animal Biology
B.A., Minnesota, 1911.

FELIX D. SCHNEIDERHAN, Student Instructor in Botany and Plant
Pathology

ROGER C. SHIFLETT, Student Instructor in Botany and Plant Pathology

JALMAR HENDRIK SIMONS, B.S., M.D., Assistant in Obstetrics and
Gynecology
B.S., Minnesota, 1908; M.D., Minnesota, 1910.

IVAR SIVERTSEN, M.D., Clinical Instructor in Gynecology
M.D., Hamline, 1904.

CHARLES E. SMYITHE, Laboratory Assistant in Pharmacy

- JOHN ALBERT STEVENSON, B.S. in For., Scholar in Botany
B.S. in For., Minnesota, 1912.
- HARVEY L. STALLARD, Ph.B., Assistant in Botany
Ph.B., Ottawa University, 1909.
- LOUISE MAUDSLEY SUMNER, B.A., Scholar in History
B.A., Minnesota, 1912.
- HEDWIG M. SUTTER, Student Helper in Chemistry
- IRA SWANMAN, Scholar in Biology
- ESTHER LYDIA SWENSON, B.A., Assistant in English
B.A., Minnesota, 1911.
- CYRIL STEAD TAYLOR, Student Helper in Chemistry
- GEORGE ELWIN THOMAS, B.S., M.D., Clinical Assistant in Medicine
B.S., Minnesota, 1901; M.D., Minnesota, 1904.
- JAMES L. TITUS, Phm. B., Assistant Pharmacist
Phm.B., Minnesota, 1911.
- ARNE G. TOLAAS, M.S., Laboratory Assistant in Botany and Plant
Pathology
B.S. in Agr., Minnesota, 1911; M.S., Minnesota, 1912.
- KATHERINE ANNA TSCHIDA, B.A., Scholar in German
B.A., Minnesota, 1912.
- PERCIVAL WILLIAM VIESSELMAN, B.A., Scholar in Economics
B.A., Minnesota, 1912.
- ARCHIBALD WAGNER, Scholar in Economics
- GUSTAV P. WARBER, Student Assistant in Agricultural Economics
- LEONE WARMINGTON, Student Helper in Botany
- CHARLOTTE WAUGH, B.A., Assistant in Botany
B.A., Minnesota, 1911.
- BRUNO WEISER, Preparator in Animal Biology
- FREEMAN WEISS, Student Helper in Botany
- RAYMOND O. WEISS, Assistant in Dentistry
- ANTON G. WETHALL, B.S., M.D., Clinical Assistant in Genito-urinary
Diseases
B.S., Valparaiso, 1898; M.D., Minnesota, 1903.
- GILBERT H. WIGGIN, Student Helper in Botany
- WILLIAM W. WILCOX, Student Instructor in Horticulture
- ROBERT WILLIAMS, B.A., M.D., Clinical Assistant in Pediatrics
B.A., Illinois, 1896; M.D., Rush Medical College, 1900.
- ROGER WILSON, M.A., Shevlin Fellow in Chemistry
B.A., Wabash, 1910; M.A., Wabash, 1911.
- HAZEL MAY WITCHIE, B.A., Theme Clerk in Department of Rhetoric
B.A., Minnesota, 1910.
- CARL ALBION WITHAM, M.D., Clinical Assistant in Rhinology and Laryn-
gology
M.D., Minnesota, 1906.

DOUGLAS F. WOOD, M.D., C.M., Clinical Assistant in Rhinology and
Laryngology
M.D., C.M., McGill, 1900.

VICTOR YNGVE, Student Helper in Chemistry

HARTIE EMIL ZABEL, B.A., Scholar in Comparative Philology
B.A., German Wallace College, 1907.

HARRY BERNARD ZIMMERMANN, M.D., Clinical Assistant in Surgery
M.D., Columbia, 1909.

OFFICERS OF ADMINISTRATION

JAMES THAYER GEROULD, B.A., Librarian
GEORGE H. HAYES, Comptroller
HENRY A. HILDEBRANDT, E.E., Superintendent of Buildings and Grounds
ERNEST B. PIERCE, B.A., Registrar
RUBY M. APPLEBEE, B.A., Record Clerk, Registrar's Office
R. E. BABCOCK, Resident Nurse, Sanford Hall
ELIZABETH BARTLETT, B.A., Stenographer, Office of the President
LUCETTA BISSELL, B.A., Stenographer, Registrar's Office
WALLACE V. BLOMQUIST, Assistant to Superintendent of Buildings and Grounds
M. EDITH BOWEN, Assistant, Serial Department, General Library
RAY E. BROWN, Auditor, Business Office
ALICE CHARLTON, Cataloguer, General Library
WILBUR CHIDESTER, Invoice Clerk, Business Office
VIVIAN COLGROVE, B.A., Assistant, Loan Department, General Library
MAUDE E. DERICKSON, Head, Serial Department, General Library
JAMES M. DREW, Registrar, Department of Agriculture
INA FIRKINS, B.A., Reference Librarian, General Library
WINIFRED GREGORY, Assistant, School of Mines Library
CLAYTON GRISWOLD, Accountant, Business Office
HENRY M. HANSEN, Clerk, Business Office
FLORENCE B. HENCH, Budget Clerk, Business Office
CHARLES J. HOLMES, File Clerk, Business Office
ALMA N. HOLSTROM, Stenographer, Business Office
SOPHIE HYDE, B.A., B.L.S., Head, Order Department, General Library
E. B. JOHNSON, Secretary of General Alumni Association
EFFIE A. KEITH, B.A., Cataloguer, General Library
JESSIE S. LADD, Matron, Shevlin Hall
EARL B. LARSON, Abstract Clerk, Business Office
ELSIE P. LEONARD, Director, Sanford Hall
H. J. LOUCKS, Assistant to Purchasing Agent
FLOYD LYLE, B.A., Secretary to the President
EVELINE CRANDALL LYON, Assistant, Medical Library
MARY A. LYON, Record Clerk, Registrar's Office
LEORA MABBETT, B.S., Cataloguer, General Library
MAY MCGREGOR, B.A., Statistician, Registrar's Office
GRACE MARCHANT, Record Clerk, Registrar's Office
ISABEL MONRO, B.S., Cataloguer, General Library
INGA PETERSON, Assistant, Department of Agriculture Library
FRANC M. POTTER, M.A., Editor, Registrar's Office
JAY C. POUCHER, Postmaster and Inventory Clerk
JOHN W. POWELL, B.A., B.D., Religious Work Director
ARTHUR C. PULLING, Librarian, Law Library
GRACE RAMSEY, B.A., Record Clerk, Registrar's Office

GUSSIE K. RYAN, Pay-Roll Clerk, Business Office

G. A. SANDBERG, Chief Clerk and Acting Purchasing Agent, Business Office

MINNIE EARL SEARS, M.S., B.L.S., Head, Catalogue Department, General Library

CONRAD SEITZ, Cashier, Business Office

HARRIET W. SEWALL, Librarian, Department of Agriculture Library

HELEN MAUDE SMITH, B.A., Head, Loan Department, General Library

E. M. SNELL, Assistant, Department of Agriculture Library

DANIEL W. SPRAGUE, Statistician, Business Office

SCHARLOTTIE STEWART, Secretary to Librarian

HELEN M. SWANSON, File Clerk and Stenographer, Business Office

GENEVIEVE WALSTON, B.A., Record Clerk, Registrar's Office

MARJORIE WILDES, Assistant, Engineering Library

LYNNE G. WORTH, B.L.S., Cataloguer, Law Library

HISTORICAL SKETCH

When Minnesota was organized as a territory March 3, 1849, it was understood that a grant of public lands would be made by Congress for the endowment and support of a university as in the case of all other states carved out of this old northwest territory.

On December 10, 1850, Delegate Sibley gave notice of a bill to grant two townships (46,080 acres) which became law on February 19, 1851. Meantime the Minnesota Legislature had by Act, February 13, created the University of Minnesota and made over to that corporation the proceeds of all lands which Congress might grant.

The location of the institution was fixed by this law "at or near the Falls of St. Anthony," by virtue of an understanding relating to the distribution of public buildings. A board of twelve regents elected in classes by the legislature had charge till 1860. In the fall of 1851 a preparatory school was opened. In 1856, intoxicated by the boom which was then raging, the Regents began the erection of the rear part of the "Old Main" Building. Before it was finished, the panic of 1857 came on. The board could not pay the contractors nor meet the interest on the bonds they had been authorized to sell.

In the winter of 1860 the Legislature replaced the old board of twelve regents by one of five appointed by the Governor. At the end of four years this board had not been able to put the finances of the University on a sound footing. Senator John S. Pillsbury laid before the Legislature of 1864 a plan to pay off the accumulated debt by the sale of less than one-third of the land grant. A special board of three regents, headed by Mr. Pillsbury, was created to make the experiment. At the close of 1866 this board reported the debt substantially liquidated. A debt of gratitude is due to the creditors and bondholders for scaling down their just claims and accepting sums far below their dues. By means of a small appropriation the special board renovated the building, purchased furniture and appliances, and in November, 1867, opened the preparatory department, to which girls as well as boys were admitted.

This board having accomplished its purpose prepared for the Legislature the bill which, enacted into law February 13, 1868, became the actual charter of the University. By far the most important element was that which united with the university endowment proper the expected income from the congressional land grant of 1862 for the support of colleges of Agricultural and Mechanic Arts.

At the close of the college year of 1869 a small company of preparatory students were found ready for college instruction. A faculty of nine professors and instructors was elected and began their work in September. In this year William Watts Folwell was appointed president.

In 1873 two students were graduated at the first commencement. Some twenty years now passed in quiet work and growth, mostly in the College of Science, Literature, and the Arts. A good beginning was

made in that of Engineering and Mechanic Arts, but in spite of the most earnest endeavors by the Regents the College of Agriculture developed slowly. There was little demand for proper agricultural instruction and the pedagogy of that branch had not been developed.

In the year 1870 Congress confirmed to the State a second grant of public land for a state University ingeniously embodied in the enabling act of February 26, 1857, which the departmental authorities at Washington had persistently refused to recognize.

In September, 1884, Cyrus Northrop succeeded to the presidency and not long after began that great development familiar to all.

The Colleges of Law and Medicine were organized. New buildings sprang up, nobly equipped, and the faculties were reinforced as means accumulated. The growth of the College of Agriculture has been remarkable. The congressional appropriations for experiment stations and additional endowment have greatly increased its efficiency and prosperity. The College of Engineering has also enjoyed a rapid and cumulative development. The Colleges of Pharmacy, Dentistry, the School of Mines, Chemistry, Education, and the Graduate School have been added in recent years, the result of public demands for special technical training and research.

President Northrop resigned in 1910, and, on April 1, 1911, George Edgar Vincent, Ph.D., LL.D., Dean of the Faculties of Arts, Literature, and Science of the University of Chicago, succeeded to the presidency of the University.

MILITARY DRILL

The Act of Congress of 1862, providing for the establishment of "Land Grant Colleges," requires that instruction be given in Military Science and Tactics at all institutions that are its beneficiaries. At any such institution where a Professor of Military Science and Tactics is detailed, War Department Orders of 1913 require that it shall be provided in its regular schedule of studies that at least three hours per week for two years or the equivalent thereof shall be assigned for instruction in the Military Department.

The United States government supplies the University with the necessary arms, equipment, and ammunition for instruction in infantry and artillery drill, and details a commissioned officer of the Regular Army to take charge of the department.

All male students in the Colleges of Science, Literature, and the Arts, Engineering, Agriculture, and Chemistry, are required to take military training during the first two years of their course. Upon first registration in the University each student taking Military Drill will be required to deposit with the Cashier not less than fifteen dollars (\$15.00) to cover cost of prescribed uniform.

An encampment of cadets is held at the beginning of each year. Sophomore cadets attending the encampment are excused from all ordinary drill from November 15 to March 15, but may be required during

this time to report for special occasions. Students due but not reporting for encampment are required to report for all military exercises during the year.

Students are cautioned to report for the first drill and inform themselves of the requirements of the department, as avoidable absences count against the student's record and can not be made up.

THE ONE-MILE LIQUOR LAW

A state law provides that "it shall be unlawful for any person to sell or dispose of any spirituous, vinous, or malt liquors within the distance of one mile of the Main Building of the University of Minnesota, as now located in the city of Minneapolis provided that the provision of this section shall not apply to that part of the city of Minneapolis lying on the west side of the Mississippi River."

DESCRIPTION OF DEPARTMENTS

The College of Science, Literature, and the Arts offers a four-year course of study leading to the degree of Bachelor of Arts. The work of the first two years is elective within certain limitations as to the range of subjects from which the electives may be chosen. The remaining work of the course is entirely elective, with the provision that a certain number of long courses be selected. The course is so elastic that it permits the student to make the general scope of his course classical, scientific, or literary, to suit his individual purpose.

In this college are given also the first two years of work of the seven-year course in Science and Medicine, leading to the degrees of Bachelor of Science and Doctor of Medicine; the two years of college work required for entrance to the Law School; and various non-professional subjects required in other schools and colleges of the University.

The College of Engineering and the Mechanic Arts offers courses of study, of five years each, in Civil, Mechanical, Electrical, and Architectural Engineering and Architecture, leading to the degrees of Civil, Mechanical, Electrical, and Architectural Engineer, and Architect. The degrees of Bachelor of Science in Engineering, and Bachelor of Science in Architecture are conferred at the end of the fourth year. This College also offers work in the Graduate School leading to the degree of Master of Science.

In the course in Civil Engineering, a period of five weeks is spent in camp in the months of June and July. This summer survey work is required of all students in this course in the vacation following the junior year.

The College of Agriculture offers four-year courses in Agriculture and Home Economics. The Degree of Bachelor of Science is conferred upon completion of these courses. The courses in Agriculture offer work along both general and special lines. Opportunities are offered to all students in the Agricultural and Home Economics courses to elect educational subjects leading to teachers' University Certificates in preparation for teaching in secondary schools.

Graduate work is offered in all special lines of Agriculture. The graduate work is for the most part correlated with work in the Experiment Station.

A summer session (Summer School of Agriculture) of six weeks offers chiefly general courses in Agriculture and Home Economics, especially designed for teachers who are unable to attend the regular college session. This is held in June and July in connection with the State Teachers' Training School.

The College of Forestry offers a four-year course leading to the degree of Bachelor of Science. In addition to the work given at the University Farm six months' work is given at Itasca State Park where a well-equipped demonstration forest is available as a laboratory. The College also

controls a Forest Experiment Station at Cloquet, which offers a good field for graduate students and original research. Provision is made for graduate work in all the various lines of silviculture and utilization.

The Schools of Agriculture offer three-year courses of study adapted especially to the needs and opportunities of farm boys and girls. They offer courses of special training for practical farm life and for practical home economics. The Central School is located at St. Anthony Park; the Northwest School, at Crookston; and the West Central School, at Morris.

The Dairy School offers a four weeks' course of practical instruction in dairying, especially designed for those who are actually engaged in the manufacture of butter and cheese. (November and December.)

A Short Course for Farmers is a four weeks' course of practical work adapted entirely to the needs of those actually engaged in farming and in the management of the farm home. (January and February.)

The School of Traction Engineering is a five weeks' course of practical instruction in the operation and handling of traction engines and other farm machinery. Engineer licenses of different grades are given according to previous experience. (May.)

The Experiment Station conducts experiments along the various lines of Agriculture which are of interest to farmers. It is closely correlated with the College of Agriculture. Its object is the solution of agricultural problems of importance in Minnesota. It offers secondarily educational and research advantages to undergraduate and graduate students of the College of Agriculture. The main Station is located at St. Anthony Park; substations are located at Crookston, Grand Rapids, and Morris. Demonstration experimental farms are also located at Waseca and Duluth.

The Extension Work of the Department of Agriculture is correlated with the Farmers' Institute work and aims to bring to the farmers of the State information leading to the improvement of the farm and home. It reaches farmers by institutes, lectures, demonstrations, and demonstration farms, industrial and agricultural contests, a press bureau, and by correspondence and personal visits.

The Law School, established in 1888, offers a course covering a period of three academic years, leading to the degree of Bachelor of Laws. Candidates for admission to the Law School must have completed at least two years of work in the College of Science, Literature, and the Arts of the University of Minnesota, or some other college or university of equal grade. A special pre-legal course of two years, covering those subjects which are particularly desirable as a preliminary to the study of law, is offered by the Academic college of the University of Minnesota. Seniors in the Academic college are permitted to take the work of the first-year class in law and count the same as the equivalent of one year's work towards their Academic degree. This provision enables students to obtain the degrees of Bachelor of Arts and Bachelor of Laws in six years.

The object of the Law School is to provide a thorough and scientific legal education, and to prepare students for the actual practice of law in

any jurisdiction where the English and American legal system prevails. Particular emphasis is laid upon the Minnesota Statutes, the special doctrines of law, and the rules of practice that obtain in this State.

In teaching the various branches of the law, the so-called "case system" is employed. This method of teaching law, which has been approved by experience and which is now employed in the leading law schools of the country, has the two-fold merit of enabling the student to acquire a thorough and practical knowledge of legal principles, and to become familiar with those processes of legal reasoning which have determined the form and character of our jurisprudence, and will govern its future development.

The Faculty is composed primarily of resident professional law teachers who devote their entire time and energy to teaching. The courses in practice are taught by men experienced in practice at the Minnesota bar.

The Medical School was organized as a teaching school in 1888, the University Medical Department having been first established in 1883 to examine students and confer degrees.

Medical education has been unified in the State of Minnesota by the absorption of all of the private medical colleges; the Hamline University Medical Department having been merged into that of the University of Minnesota in 1908; and the College of Homeopathic Medicine and Surgery having been discontinued in 1909.

The requirements for entrance are a four-year high school course, including two years of Latin; and two years of college work equivalent to that of the College of Science, Literature, and the Arts, of this University, and including at least one year each of physics, inorganic chemistry, qualitative analysis, and biology; and sufficient German or French to ensure a reading knowledge.

The course in medicine includes four years of thirty-six weeks of laboratory, didactic, and clinical work and a fifth year spent in clinical work in an approved hospital or in advanced laboratory studies in this college.

All students entering in September, 1912, or later, will be required to secure the B.S. or B.A. degree before receiving the M.D. degree.

The school occupies buildings of the most modern construction and equipment on the University campus. Two of these buildings have just been completed and occupied.

The University Hospitals include the Elliot Memorial Building, occupied in September, 1911, the out-patient department, the hospital for infectious diseases, and several temporary buildings which provide for the hospital service, the School for Nurses, and nurses' homes. The University also controls the St. Paul Dispensary.

The public hospitals and dispensaries of the Twin Cities, serving a population approximating 550,000, also provide clinical teaching for the Medical School.

The school offers the following courses of study:

1. Course leading to the degrees of Bachelor of Science and Doctor

of Medicine. Five years in the Medical School, viz., four years of graded study and one year in a hospital internship or in advanced laboratory studies or research. Open to those presenting the preliminary requirements stated above.

2. Course leading to the degrees of Bachelor of Arts and Doctor of Medicine. Students presenting three years of work in the College of Science, Literature, and the Arts, including the required subjects mentioned, which leads up to the degree of Bachelor of Arts, may elect the first year in medicine in their senior academic year, receiving the B.A. degree at its close, and the M.D. degree upon the successful completion of the remaining four years in medicine.

Similar affiliations exist with certain other colleges, whereby the B.A. degree may be conferred by these colleges under the same conditions.

3. Graduate and research work is offered to qualified students. A special announcement covering graduate work and summer courses is in preparation.

4. The School for Nurses, organized in connection with the University Hospital service, is under the control of the Faculty of the Medical School. (See School Bulletin.)

The College of Dentistry offers a three-year course of study, of nine months each. Upon completion of the prescribed course the degree of Doctor of Dental Surgery is conferred.

The University now offers an optional six-year course of study. The first three years of the course are given in the College of Science, Literature, and the Arts. The last three years are given in the College of Dentistry. It leads to the degree of Bachelor of Arts at the end of the first four years and to the degree of Doctor of Dental Surgery at the end of the six-year course.

The College of Pharmacy was organized in 1891 upon request of the Minnesota State Pharmaceutical Association. In the organization and conduct of the college, the Board of Regents and the Faculty have had and have the co-operation of the pharmacists of the Northwest. The college is of University grade and maintains a high standard of entrance and graduation requirements. Every effort is made to comply with the demands of the pharmaceutical profession of the Northwest and elsewhere. The college offers a regular course extending over two or three years leading to the degree Bachelor of Pharmacy, and two postgraduate courses, the first requiring at least one additional year of resident work and leading to the degree Master of Pharmacy, and the second requiring one or two additional years of work and leading to the degree Doctor of Pharmacy. It is now contemplated to add a four-year course to include somewhat more than is now included in the regular two-year course and about two years of academic work. This course will lead to the degree Bachelor of Science in Pharmacy, and will in all respects be at least the equal of similar courses given in other university colleges of pharmacy. The course will begin as soon as the College will be provided with larger quarters. The Board of Regents have also authorized a course somewhat lower than the regular course now given, to comply, however, with

the requirements of the American Conference of Pharmaceutical Faculties. It is not certain at this time that this course will be organized.

The School of Mines was established in 1889. Its buildings and laboratories are located on the grounds of the University of Minnesota. Students of the School of Mines have, therefore, all the opportunities afforded by a large university. Three regular courses are offered, namely, Mining Engineering, Mining Engineering (specializing in Geology), and Metallurgy, leading to the degrees of Engineer of Mines (E.M.), Engineer of Mines (in Geology) [E.M. (Geology)], and Metallurgical Engineer (Met. E.), respectively.

Students passing satisfactory entrance examinations in Elementary and Higher Algebra, and Plane and Solid Geometry may graduate in four years. Students presenting high school credentials to the extent indicated on page 75, may graduate in five years.

Courses in the school are designed for the purpose of preparing men to enter their profession with a thorough grounding in mathematics, in the sciences, and in the fundamental principles of mining engineering and metallurgy. The technical courses consist of lecture work in mining, metallurgy, and allied subjects, supplemented by laboratory work in assaying, chemistry, ore dressing, and metallurgy; field work in plane and under-ground surveying; actual practical mining and metallurgical work in Minnesota and Western mining centers. A system of apprenticeship during summer vacations has been inaugurated. This work has become part of the curriculum and is required of all students who are candidates for degrees.

Minnesota's enormous iron ore production continually brings before the public the necessity for trained men to aid in the development of the country's mineral resources. The State has developed its School of Mines with this end in view.

The School of Analytical and Applied Chemistry offers three courses. Two of these, the Analytical and the five-year course in Arts and Chemistry, are designed for those who wish to become teachers of chemistry, analysts, and investigators. The four-year Analytical course leads to the degree of Bachelor of Science in Chemistry, while the five-year course leads to the degree of Bachelor of Arts after four years and Bachelor of Science in Chemistry at the end of the fifth.

The third or Applied course extends over five years, leading to the degree of Bachelor of Science at the end of four years and Chemical Engineer at the end of the fifth. These courses aim to give the student a broad foundation in chemistry and some of the allied sciences.

The two buildings occupied by the school contain six large laboratories and about twenty smaller ones well equipped for carrying on a wide range of work.

The College of Education offers a practical and a theoretical training for prospective high school teachers and principals, for principals of elementary schools, for supervisors of special studies, and for superintendents of school systems.

Students are admitted to the college only after the completion of at

least two full years of college work, during which time they should have pursued at least one course in general psychology, and prospective high school teachers should have given especial attention to one or more of the subjects which they expect to teach. The two years' course of study, beginning with the junior year, leads to the degree of Bachelor of Arts in Education. Preparation for teaching is planned to include a thorough grounding in the correct use of English, and adequate training in general and in educational psychology, in the history and organization of schools, in educational theory, and in the practice of teaching; and also, quite aside from the liberal training of the regular college course, specific preparation in both the subject matter and the methods of those subjects in the secondary curriculum which each candidate proposes to teach. A third year leads to the degree of Master of Arts, including advanced studies in education and philosophy, and in one or more of the subjects of the secondary curriculum, at the option of the candidate.

In addition to the ordinary academic and professional studies connected with the training of the teacher, the college offers an opportunity for observation and practice teaching under supervision, as well as special facilities in voice culture, public school music, and physical culture, together with elementary and advanced courses in drawing, domestic art and domestic science, manual training, and business education—those specialized forms of the secondary curriculum which are being introduced so rapidly into the public high schools of Minnesota.

The Graduate School gathers into a single organization and unites for the purpose of administration all the activities of the University in all its schools and colleges in so far as they relate to advanced instruction offered for the second or higher degrees, viz., Master of Arts and Doctor of Philosophy conferred for advanced, non-technical study; Master of Science and Doctor of Science for technical study. The privileges of this school are in general open to all who have received bachelor's degrees from reputable colleges and universities, based on courses substantially equivalent to those at this University.

The University Summer Session is organized for six weeks in June and July under the authority of the Board of Regents as a regular part of the University, replacing the summer school formerly held under the State Department of Public Instruction. Courses carrying University credit, amounting in all to more than twice the number required for the bachelor's degree and including all the subjects of the state professional certificate, are offered for college students, experienced teachers, and others who desire the advantage of advanced study. Students may secure not more than six credits at one session.

The work heretofore given for rural and graded school teachers in the elementary section of the summer school is now conducted by the State Department of Public Instruction as a State Training School for Teachers at the University Farm, St. Paul.

College courses in Agriculture and Home Economics, for which University credit is given, are offered at the University Farm.

Special Courses.—In practically all of the colleges, students of mature

age and adequate preparation are permitted to pursue, under the direction of the Faculty, one or two distinct lines of study.

University Extension.—All extension work of the University of Minnesota has been established as an organic unit of the University under the title of Extension Service. The Extension Service of the University functions in two main lines and these two functions have been called the General Extension Division and the Agricultural Extension Division. The extension work of the University of Minnesota, therefore, except the purely agricultural phases, is correlated under the management of a newly organized General Extension Division. The new organization retains and augments the features previously developed by various departments, avoids unnecessary duplication of effort, and makes consistent growth possible.

At present the extension activities fall into six more or less distinct subdivisions. (1) Correspondence Courses are given by nearly every department of the University. These include regular academic, business, teachers' professional, and special courses. New subjects are constantly being added. (2) Evening Extension Courses are offered in the Twin Cities and Duluth, and they will be extended to other centers as the demand increases. Machinists, engineers, architects, business men, teachers, social workers, and prospective lawyers have been the chief patrons of these courses. The location of the University in the heart of the manufacturing and commercial centers of the State affords an especially good opportunity for the development of business and engineering courses. (3) Extension instruction by lectures is conducted under several forms: (a) single lectures to special groups, such as commercial clubs, in various towns throughout the State; (b) courses of six or more instructional lectures; (c) popular lectures, concerts, and entertainments of a lyceum character, singly or in courses, given by members of the Faculty and also by outside professional talent; (d) the general educational and entertainment features of the farmers' short courses and the county fairs; (e) the "University Weeks." This last project, first tried in June, 1912, consists of a week of educational lectures, entertainments, and demonstrations. Towns are grouped into circuits of six, and the staff operates in six program divisions. Each program division makes the entire circuit, thus affording each town a new program daily, or six during the week. (4) The demand for assistance by way of information upon public questions and the methods of handling such information, has led to the establishment of a department of Debating. The plan includes field work by an expert instructor and organizer, and office work in collecting and classifying material and handling correspondence. (5) Introductory courses from the curriculum of the Law School are offered as evening courses to young men and women who look forward to this profession or who desire the work as part of a general preparation for business activity. (6) Information and illustrative material are furnished largely under two forms: (a) a Municipal Reference Bureau has as its function the procuring of information of all kinds for city officers and the bringing to bear the resources of the University upon the problems of such officers; (b) loan

collections of lantern slides are furnished in traveling cases accompanied by typewritten lectures. This service is to be greatly extended and is to embrace also the loan of moving picture films.

Agricultural extension including lectures, demonstrations, institutes, and short courses is carried on under the direction of the Agricultural Extension Division of the Department of Agriculture.

The extension work is developing rapidly, and its organization will become increasingly complex as the University attempts to measure up to the demands of the State for this kind of co-operation.

EQUIPMENT

GROUNDS AND BUILDINGS

The thirty-one buildings of the University used by all departments of instruction save that of Agriculture, are located upon the University campus, a tract, including the new campus, of about one hundred nine acres lying between University Avenue and the river and between Eleventh and Nineteenth Avenues Southeast, in the city of Minneapolis. The campus is well wooded, having a fine grove of native oaks and commands a beautiful view of St. Anthony Falls and the city, but is sufficiently removed from the business center to insure desirable quiet and retirement. The new campus area to the south of the Northern Pacific Railway is now occupied by the new buildings of the College of Engineering and the Medical School built in accordance with the Cass Gilbert Plans.

The Department of Agriculture and the State Experiment Station are situated at St. Anthony Park, two and one-half miles directly east of the University, on the University Farm, which comprises about four hundred nine acres, in addition to which there are one hundred twenty acres rented. The Department has a very fine campus which commands excellent views of Minneapolis and St. Paul, besides a vast sweep of country to the south, extending beyond the Mississippi. The thirty-five buildings provided for this Department are located upon this Campus.

ASTRONOMICAL OBSERVATORY

The Astronomical Observatory contains a ten and one-half inch refracting telescope furnished with a third lens for converting it into a photographic telescope; a filar micrometer; a spectroscope by Brashear; a meridian circle and zenith telescope; a Repsold photographic measuring machine; a chronograph, astronomical clocks, and a five-inch short-focus photographic telescope.

MEN'S GYMNASIUM*

The gymnasium is located in the Armory, and is well equipped with a variety of gymnastic appliances to which has recently been added a swimming pool. The object of the gymnasium is to provide all of the students of the University opportunity for exercise to build up their general health. It also provides special training to correct physical defects and functional derangements. The gymnasium is in charge of a professional medical director and assistant, and the training is under their direct supervision. A thorough physical examination is required at the beginning of the year of all new matriculants in the University and all

*See section "Women Students," page 71, for information concerning the women's gymnasium.

students using department privileges immediately before and after the gymnasium course, and a record is made of the same. The examination of these records shows a marked improvement in the standard of health of the average student during his college course. The gymnasium is open at all times to students of the University, who are free to use the apparatus and to pursue a course of physical training under the direct supervision of the director and his assistant. In some of the colleges of the University physical training is required of first-year students.

MUSEUMS AND COLLECTIONS

The museums of the University contain material obtained from various sources, arranged with special reference to its use for illustration. Among the more notable collections are the following:

Geology and Mineralogy.—This museum includes the Kunz collection of minerals, purchased of George F. Kunz; several suites of crystalline rocks secured from various sources; the Ward collection of casts contributed in part by citizens of Minneapolis; collection of rocks, fossils, minerals, and economic products of Minnesota; upwards of 9,000 entries gathered by the Geological Survey of the State; the Sardeson collection of paleozoic fossils of Minnesota, Wisconsin, Iowa, and neighboring states, comprising 30,000 specimens; a series of 3,000 thin sections of typical rocks and minerals, many of them representing Minnesota localities; purchased material comprising a fine collection of crystals; 5,000 minerals and 3,000 specimens of economic minerals and crystalline rocks, and a collection of over 4,000 photographs and lantern slides.

Mr. Arus S. Williams, of Minneapolis, has given to the University his extensive collection of negatives and photographs. During many years of active work as a photographer, he has collected a series of several thousand plates representing geologic and geographic subjects, commercial views, and historic scenes. This is known as the A. S. Williams Collection of Photographs and Photographic Negatives, and has proved of great value in illustrating the physical, commercial, and political history of the State.

Zoology.—The zoological museum contains all the material collected by the Zoological Survey; a collection of mounted Minnesota birds representing about one-third of the species found in the State; a number of the mammals of the State and a few from the more western states; a collection of fishes, molluscan shells, Philippine Island corals, and other foreign material.

The museum material includes a beautiful group of Woodland Caribou recently presented by James Ford Bell, the Roberts and Benner collection of skins, nests, and eggs of birds of Minnesota; the Oestlund collection of insects rich in Aphidae; the Guthrie collection of Collembola; the Menage collection of Philippine Island corals; the Survey collections, and a considerable amount of good material available for neither display nor study because the quarters are utterly inadequate.

Botany.—The material forming the museum in Botany includes the general herbarium numbering about 400,000 specimens and comprising the series of plants collected by the State Botanist; an alcoholic collection of material for dissection; a collection of the woods of Minnesota; a limited series of Carboniferous and Cretaceous fossil plants, including the Lesquereaux collection from the Minnesota River localities. Two new herbaria are being developed with special reference to museum needs. One is a formation herbarium arranged to show the grouping and importance of the species which form the natural plant societies of the State. The other is designed to show the origin of new forms and species of plants, both in nature and under cultivation. A beginning has also been made in bringing together collections of the Botanical Survey, as well as from other sources, designed to illustrate the uses of plants in every-day life and in the industries.

Mining and Metallurgy.—A museum of mining and metallurgy is located in the School of Mines Building. Representative ores of all the most important metals, drawings, photographs of furnaces, sectional furnace models and samples of all the different furnace products are exhibited to the public and are used as illustrative material for regular classes. Various mine appliances, pieces of machinery, underground photographs, models of mine timbering with sectional maps of some of the large Minnesota properties, complete the collection. A collection begun will include ores from all the important mines on the Mesabi range. These samples with analysis show well the character of ore produced by the State.

Sociology and Anthropology.—Photographs and exhibits, showing the work in Charities and Corrections of the various state institutions of Minnesota; photographs and exhibits of leading national movements for better social conditions; wall-charts and maps which present graphically a large number of sociological facts, from various parts of the United States; a collection of plaster-cast crania and skulls, showing man's ancestors, fossil man from Western Europe, typical members of the various living races and sub-races, both normal and artificially deformed; a collection of face-masks in color, presenting well the Oceanic peoples; a series of busts in white, presenting facial and cranial characteristics of a considerable number of different peoples; natural cranial, skull, and skeletal materials from some dozen different continental and insular geographic areas; the Guthrie collection of ethnologic specimens from the Bulu tribe of Kamerun Province, Africa, presenting the material culture of a savage people in the Tropics; a collection of American Indian stone implements, weapons, etc.

Technology.—A cabinet of specimens illustrating the products and processes of Applied Chemistry is being collected by the professors of Chemistry, as opportunity offers. The collection embraces fuel, ores, furnace products, textile materials, both raw and manufactured, dye-woods and other materials used in dyeing; specimens illustrating the bleaching and printing of cotton, linen, and woolen goods, earthenware, pottery, etc.

Latin.—About eight hundred black and colored lantern slides, illustrating chiefly Roman architecture, sculpture, and painting, Virgil's Aeneid, Rome, Pompeii, and Italian scenery. Three sets of Riepert's wall maps. A set of Cybulski's Latin wall charts. A few specimens of ancient marbles. A small set of ancient articles—a stylus, a ring, a bracelet, fibulae, etc. A set of stereoscope views of Italy and a small number of pictures. Busts of Cicero, Caesar, Augustus, and Venus di Milo.

English.—A few facsimiles of manuscripts, plates that may serve the purpose of archaeological instruction, publication of texts, reprints of black-letter books and of original editions, photographs, and portraits have been gathered.

The College of Engineering.—The College of Engineering has equipment illustrating the historical development or evolution of many forms of machinery and apparatus in Mechanical and Electrical Engineering. In its shops and electrical laboratory, modern machinery and apparatus is used for actual operation in metal and wood working, and in electrical tests and demonstrations. The new Experimental Laboratory is a large beautiful building devoted to tests of engines, boilers, pumps, the flow of water, the strength of cements and concrete, and many other operations in experimentation and research. The Legislature has recently made appropriations for the remodeling of the Electrical Laboratory and the addition of up-to-date machinery, apparatus, and appliances. In the machine and woodworking shops of the Department of Mechanical Engineering extensive additions will be made to the equipment. In the Experimental Laboratory much new apparatus is to be installed.

Engineering Mathematics.—This department has recently added to its apparatus used for illustration in teaching, several types of slide-rules including those of Thatcher, Faber, Keuffel and Esser, Schureman's Computer, Boucher's Calculator, also Amsler's Polar Planimeter.

Mathematics.—The collection includes the Shroeder wooden and the Schilling gypsum, string and paper models for Solid Analytical Geometry, many of the Schilling models for illustrating the Theory of Surfaces, several of the Schilling mechanical devices for describing various loci, the Keuffel and Esser models for Solid Geometry, and large slated globes, suitably mounted, for use in Spherical Geometry and Spherical Trigonometry.

LIBRARIES

The University Library consists of

1. The general library.
2. The college libraries, including those of Engineering, Agriculture, Law, Medicine, Pharmacy, and Mines.
3. The departmental libraries, including those of Arts, Astronomy, Animal Biology, Botany, Chemistry, Mechanical and Electrical Engineering, French, Geology, German, Greek, Latin, Mathematics, Military Science, Physics, Rhetoric, and Scandinavian.

The whole number of bound volumes owned by the University is about one hundred and seventy-five thousand; unbound books and pamphlets about twenty thousand. About one thousand current periodicals are received.

The general library is open to students and the public from eight a. m. to ten p. m., except Sundays and legal holidays.

The departmental libraries are designed especially for the work of their respective departments and consist mainly of books of reference and current periodicals relating to technical subjects. The private collections of the professors are usually available upon application when necessary for research.

Besides the University library the following libraries are easily accessible: The Minneapolis public library, containing over two hundred and fifty thousand bound volumes and over fourteen hundred of the leading newspapers, magazines, and periodicals of the world; the St. Paul public library with about one hundred and twenty-five thousand volumes; the Minnesota Historical Society library of about eighty-five thousand volumes and the State library of about fifty-nine thousand volumes in the capitol in St. Paul; the Minnesota Academy of Natural Sciences library of twelve thousand titles.

ASSISTANTS, SCHOLARSHIPS, LOANS, AND PRIZES

ASSISTANTS AND SCHOLARS

It is the policy of the University to encourage graduate study and to provide for assistance in laboratories, reading of test and examination papers, supervision of note books, and similar services by the appointment of assistants and scholars in departments where such services are required. The general principles which now control the making of such appointments are: (1) the appointments are made by the Board of Regents, upon the nomination of the head of the department concerned and its ratification by the dean of the college; (2) appointments are for one year only, but may be renewed; (3) the appointees must be graduate students who are taking work along the line of their appointments; (4) they are not regularly placed in charge of classes, and when exceptions are made to meet emergencies the arrangement is regarded as a temporary one.

FELLOWSHIPS

The Shevlin Fellowships

Four fellowships, each of the value of \$500 per year, were established in the Graduate School through the gift of \$40,000.00 by the late Honorable Thomas H. Shevlin, of Minneapolis. The donor designated the objects of these four fellowships as follows: Academic, Agriculture, Chemistry, and Medicine.

The holders of these fellowships are not required to pay any fees to the University.

Academy of Medicine Fellowship

The Minnesota Academy of Medicine has made provision for a research fellowship in the Medical School, which bears an annual stipend of \$250 to \$300. The appointment of the incumbent is placed in the hands of a committee of the Academy of Medicine, who will determine also the character and extent of the work and in what department it shall be undertaken.

Further information may be obtained from the Dean of the Medical School.

SCHOLARSHIPS

The Moses Marston Scholarship in English

Friends and pupils of the late Professor Moses Marston have given one thousand dollars as a memorial fund to him. The annual income of the fund is to be used to further English study. The scholarship is

awarded by the English Department as a recognition of special capacity for literary and linguistic studies.

The Albert Howard Scholarship Fund

Under the last will and testament of Mr. James T. Howard, of the town of St. Johnsbury, Vermont, \$4,166.81 was left to the University to establish a scholarship to be known as the Albert Howard Scholarship. The scholarship is awarded to graduate students in the College of Science, Literature, and the Arts, and amounts to about \$240 per year.

The Minneapolis Steel and Machinery Company Scholarship

The scholarship of \$500.00 created by the Minneapolis Steel and Machinery Company is available for work by a graduate student in the laboratories of the College of Engineering. The subject upon which work will be carried on is to be determined by agreement between the Company and the College.

The Minneapolis College Woman's Club Scholarship

The College Woman's Club of Minneapolis has established a scholarship for the benefit of women students in this University. For the year 1913-14 this scholarship amounts to \$150. In awarding it the preference will be given to students in the junior and senior classes and to graduate students. Application for this scholarship may be made to the Dean of Women.

The St. Paul College Woman's Club Scholarship

The St. Paul College Woman's Club offers for the year 1913-14, a scholarship of \$100. In awarding it, the character, the scholarship, and the need of the applicants will be considered. Whenever possible, preference will be given to young women from St. Paul. Applications for it may be made to the Dean of Women.

STUDENT LOAN FUNDS

The Gilfillan Trust Fund

The Hon. John B. Gilfillan has given to the University the sum of fifty thousand dollars, yielding an annual income of two thousand dollars, to be used by the Board of Regents to assist worthy students, needing such aid, to secure an education. The Regents are empowered to give this aid in the way of loans or gifts, according to the circumstances of the case. As a rule the fund is used as a loan fund, and a small rate of interest

is charged. The details of the regulations which have been adopted by the Regents for the administration of the fund may be learned by addressing the President of the University.

The Elliot Scholarship Loan Fund

To fulfill the wishes of the late Dr. A. F. Elliot to aid young men who find their efforts to obtain a practical education embarrassed through lack of means, the sum of \$5,000 was placed in the hands of the Board of Regents as a scholarship fund. The income from this fund is loaned students in the School of Mines on the following conditions: The financial needs of the applicant, his scholarship, moral character, enthusiasm shown in his work, and promise of usefulness in his profession. When money is available, it may be loaned to pay expenses of worthy students during sickness. The loans are to be repaid, without interest, at the earliest convenience of the recipients.

The Puritan Colony Scholarship Loan

The Puritan Colony of the National Society of New England Women has established a loan fund for women students of the University. For the year 1913-14 this scholarship loan amounts to one hundred dollars. It is available for women students of New England birth or ancestry. In awarding it the preference will be given to young women in the junior and senior classes. Application for it may be made to the Dean of Women.

Students' Trust Fund

The class of 1902 left with the School of Agriculture a fund of \$100 "to assist by temporary loans at a reasonable rate of interest, deserving students needing such help, who are not below the B class in the School of Agriculture." This fund is in charge of a committee consisting of the Dean, the Principal, the Preceptress, and the President of the A class.

The Ludden Trust

The late Honorable John D. Ludden, of St. Paul, gave to the University of Minnesota \$10,000 to be held, invested, and reinvested by the University through its Board of Regents, and the income thereof to be collected, received, and applied by said Board of Regents to the financial assistance of students in the School of Agriculture.

This fund produces \$400 a year. Those wishing to avail themselves of its benefits should apply to the Dean of the Department of Agriculture, who will present the matter to the Board of Regents.

PRIZES

The John S. Pillsbury Prize

Three prizes of one hundred, fifty, and twenty-five dollars each, offered by the heirs of the late John S. Pillsbury, have been awarded annually for the best work in the Department of Rhetoric, as evidenced finally by an oration in public.

The Frank H. Peavey Prize

Mrs. Frank T. Heffelfinger and Mrs. F. B. Wells continue the prize of one hundred dollars, established by their father, the late Frank H. Peavey. This prize is awarded to the members of the team winning the annual freshman-sophomore debate.

The Maurice L. Rothschild and Company Prize

Maurice L. Rothschild and Company have provided three cash prizes of fifty, thirty, and twenty dollars each, which are annually awarded to those three students in the freshman and sophomore classes who write and deliver the best orations.

The '89 Memorial Prize in History

The class of 1889, at graduation, established a prize of twenty-five dollars each year, to be known as the '89 Memorial Prize, and to be given for the best thesis in history, written from the sources, by a member of the graduating class. The award is made by a professor of history in some other institution.

The Frank O. Lowden Prize

The Hon. Frank O. Lowden, of Chicago, offers as prizes to be competed for by the Northern Oratorical League, the annual income on an endowment of three thousand dollars. A prize of one hundred dollars will be given to the orator winning the first place, fifty dollars to the orator winning second place, and the remainder will be set aside each year for an interest fund to accumulate, and, in time, produce another endowment.

The Andrew Lanquist Prize

The Society for the Advancement of the Study of Swedish offers an annual prize of twenty-five dollars to be known as the Andrew Lanquist Prize, in honor of the donor. It is awarded to the student who, during the current year, has received the highest rank in the study of Swedish.

The William Jennings Bryan Prize

The Honorable William Jennings Bryan in 1898 gave the University the sum of two hundred and fifty dollars for the encouragement of studies in Political Science. The quadrennial income from this fund, amounting to fifty dollars, will be awarded every fourth year as a prize to the writer of the best essay upon a topic to be announced. The essay must be handed to one of the instructors in Political Science by May 1st, and must not exceed ten thousand words. Three judges to be designated by the President of the University will award the prize. The next award will be made in 1917.

The Alumni Weekly Gold Medal

This medal is provided by the *Minnesota Alumni Weekly* and is awarded annually by the Faculty Committee on Debate and Oratory, to that member of the graduating class who has, in the judgment of the Committee, made the best record in forensics during his college course. The medal is awarded only to a student who has shown himself broad-minded, unselfish, industrious, and willing to work courteously and enthusiastically with others so as to serve the highest interests of debate and oratory in the University. The recipient must be a type and a model, as nearly as the student body offers such a candidate each year, of what a man may make himself through diligent application to the duty next at hand.

The Rollin E. Cutts Prize in Surgery

Dr. Mary E. Smith Cutts, '91 Medical, has given to the University, as a memorial of her husband, the late Dr. Rollin E. Cutts, '91 Medical, the sum of \$500.00, the income from which is to be awarded in the form of a gold medal to that member of the senior class of the Medical School who presents the best thesis showing original work upon a surgical subject.

The Dr. J. W. Bell Prize

Through the generosity of Dr. John W. Bell, Emeritus Professor of Clinical Medicine and Physical Diagnosis, an annual prize of \$100 is offered in the Medical School, to the student showing the highest proficiency in physical diagnosis.

Information as to special conditions connected with this prize may be obtained from the Dean of the Medical School.

The Mercer Prize

Mr. H. V. Mercer, of Minneapolis, offers three medals to be awarded annually, to the three winning debaters in a Law School debate, or series of debates, to be conducted under rules laid down by the Law Faculty.

The Briggs Prize in Foundry Practice

For the encouragement of students in foundry practice, Mr. O. P. Briggs, commissioner of the National Foundrymen's Association, Detroit, Mich., offers \$75 annually, in two prizes, which are to be accompanied by gold medals. The competition is open to sophomores in the College of Engineering, and the prizes will be awarded for the best essay relative to the above subject. No prize will be awarded if less than five essays are submitted in competition. Essays should contain about 3,000 words and must be submitted to the Professor of Rhetoric on or before May 1st.

The George C. Andrews Prize

Mr. George C. Andrews, M.E. '87, offers an annual prize to the Senior Mechanical Engineers for the best essay on any subject connected with heating and ventilation. The prize in this contest consists of \$50.00 in cash accompanied by suitable medal; a second prize is also given which consists of \$25.00 in cash accompanied by a medal. The winner of the first prize is offered a position with the George C. Andrews Heating Company.

Pharmaceutical Association Prize

Nomination for membership in the American Pharmaceutical Association and the first year's dues are offered annually by Dean Wulling to the student in the College of Pharmacy earning the highest total average of all standings.

STUDENT ORGANIZATIONS AND PUBLICATIONS

The Students' Council.—The Students' Council of the College of Science, Literature, and the Arts is a representative body, elected annually by the students, the purpose of which is "to afford a suitable medium for the exchange of opinion between the graduates and the Faculty; to exercise general supervision over student affairs; and to crystallize and to make effective the sanest phases of undergraduate opinion."

RELIGIOUS ORGANIZATIONS

The Young Men's Christian Association seeks to promote in all men of the University the development of an intelligent and vital religious life. This Association occupies a commodious building on the campus and keeps it constantly open, with a general secretary in charge. All men in sympathy with the object of the Association are eligible to membership. This building is maintained as the social and religious headquarters of all young men in the University.

This Association provides an employment bureau whose services are free to students in all departments of the institution, as well as a committee to help students find comfortable rooms and boarding places. The Association also maintains an educational department in which students may make up their entrance conditions at a nominal charge for instruction. The general secretary will be pleased to correspond with any young man intending to come to the University. Any inquiry about board, room, employment, or general information will gladly be answered, and a hand-book will be sent to anyone wishing it. Address the General Secretary of the Young Men's Christian Association, University of Minnesota, Minneapolis, Minnesota.

The Young Women's Christian Association is the center of Christian life among the young women of the University. Its object is "to deepen spiritual thought in the University woman, to environ her with a semblance of home, to bring to her friendship, assistance, and sociability by stimulating student fellowship, and to give her personal help when necessary."

To this end frequent socials and informal teas are given throughout the year; each Wednesday noon a meeting is held in the Assembly Room of Shevlin Hall. It is the purpose of the association to make these meetings of practical help in the every-day lives of the University girls, by better interpreting the modern trend of religious thought in some of its phases. A number of courses are offered in both Bible and Mission study. The general secretary devotes all of her time to the association and will be pleased to correspond with any young woman who wishes information regarding the University.

All young women are invited to visit the Young Women's Christian Association before registering. Women from the upper classes will be there during the opening days to give advice and assistance.

The Christian Science Society is a student organization. Regular meetings are held twice a month in Folwell Hall. The purpose of these meetings is to unite the Christian Scientists of the University in closer bonds of Christian fellowship so that they may aid each other in the practical application of Christian Science to the problems of college life.

The Episcopal Church maintains a house for men of the University and sustains work among the students, both men and women. The rector of the Holy Trinity Church, Fourth Avenue and Fourth Street S. E., is Chaplain for the students. Services are held on the campus from time to time, and special classes and clubs for students are maintained in Holy Trinity parish. All Episcopalians are requested to present themselves at the church early in the college year.

The University Catholic Association (the U. C. A.) is an organization of students which has for its purpose the promotion of the welfare of the Catholic students of the University. The work of the Association is under the supervision of a Spiritual Director appointed by the Archbishop. The Association confines itself to uniting those who profess the Catholic faith by means of lectures and entertainments. Regular meetings are held every Sunday afternoon at 4 o'clock in the Y. M. C. A. Building on the Campus. These meetings are addressed by the Spiritual Director and by speakers from among the Catholic clergy and laity of the Twin Cities. All Catholic students and Faculty members are eligible to membership. Plans are under way for the erection of club rooms for the use of the Association.

The University Liberal Association is a non-sectarian religious organization meeting weekly for the purpose of cultivating liberal thought in religious matters, and social intercourse among the so-called liberally religious people upon the campus.

HONORARY ORGANIZATIONS

Phi Beta Kappa.—A chapter of the honorary society of *Phi Beta Kappa* was established at the University in 1892. Not more than one-twelfth of the seniors of the College of Science, Literature, and the Arts are elected to membership each year. Election is based upon high scholarship and character.

Sigma Xi.—A chapter of the honorary scientific society of *Sigma Xi* was established at the University in 1896. A small proportion of the graduates of the scientific and technical departments are elected to membership each year. Election is based upon research ability, high scholarship, and character.

Tau Beta Pi.—A chapter of the honorary engineering society of *Tau Beta Pi* was established in the University in 1909. The membership of this fraternity is made up of engineering students, and the basis of eligibility is character and excellence in scholarship.

Lambda Alpha Psi.—This society was founded for the purpose of encouraging the study of languages and their literatures. To this end it maintains a course of popular lectures on artistic, literary, and linguistic subjects, given at intervals throughout the college year, by various professors in the University and noted educators from abroad. A small number of students from the senior class in the College of Science, Literature, and the Arts, who have specialized in languages and literature, are elected each year to membership, such elections being based upon scholarship and high character.

The Scandinavian Literary Society is composed of members of the Faculty and students of the University who are interested in Scandinavian culture and literature. Monthly meetings are held.

LITERARY ORGANIZATIONS

Literary Societies.—There are four men's literary societies at the University: Shakopean, Forum, Castalian, and Platform Club. They are mainly debating clubs. Every student is welcome to attend the literary sessions, but the business sessions are usually held behind closed doors. Students desiring to join should make early application to some member of the society he prefers, as the membership is limited. The women's societies are Minerva, Theta Epsilon, Thalian, and Acanthus. Members to these are elected only by vote of the society.

The Philomathian Literary Society, which is co-educational, is an organization of the students of the College of Agriculture, its object being to train its members in the art of public speaking, debating, and parliamentary practice. The society meets once a week and presents a program including readings, recitations, debates, etc. Its membership is limited to forty and includes only students in the College of Agriculture.

The Debating Board has charge of home and inter-collegiate oratorical contests.

The Northern Oratorical League is composed of the oratorical associations of the University of Michigan, Northwestern University, the University of Wisconsin, Oberlin College, the State University of Iowa, the University of Illinois, and the University of Minnesota. Its purpose is to foster an interest in public speaking and to elevate the standard of oratory by holding annual contests. The contests are open only to undergraduates.

SCIENTIFIC ORGANIZATIONS

The Agricultural Club welcomes to its membership any male student in the College of Agriculture. Faculty men and others especially interested in agriculture may be elected to honorary membership.

The purpose of the club is to promote scientific agriculture by meetings and the public discussion of agricultural problems, especially those which are of immediate importance and upon which little has been published.

The Science Club is composed of the members of the Faculty of the Department of Agriculture and others connected with the institution. Meetings are held on the first Monday evening of each month. The purpose of the club is to bring those connected with the College and Station in closer touch with one another and with the many lines of work carried on in the several divisions.

The Home Economics Association is an association representing all of the students in the Home Economics course, with membership open to all women in the course. It is for the purpose of enlarging the opportunities both social and intellectual, and of furthering the interests of the women of the College of Agriculture both in the University and throughout the State.

The Forestry Club was organized by the forestry students for the promotion of good fellowship and mutual interests. The specific object of the club is to keep the members up to date on forestry literature and current affairs in the lumber world.

American Chemical Society.—A local section of the American Chemical Society has been organized in Minnesota with headquarters at the University.

School of Chemistry Society.—The School of Chemistry Society is an organization of the students of the school, which meets once a month to consider topics of general interest. The society also procures lecturers to address the school.

The Engineers' Society meets once in two weeks to listen to addresses by prominent engineers and for the discussion of various engineering topics. *The Minnesota Engineer* is published quarterly by this society. It is devoted to the publication of articles upon engineering subjects by professors and students.

The School of Mines Society meets once a month to listen to addresses by students, alumni, and well-known mining and metallurgical engineers on various topics interesting to the professions. All students regularly registered in the School of Mines are eligible to membership. This society forms an important connecting link between the graduates in the field and the School of Mines.

The Minnesota Section of the American Institute of Electrical Engineers meets once a month alternately in St. Paul and Minneapolis. Students of the College of Engineering are welcome at these meetings.

The Northwestern Branch of the American Pharmaceutical Association meets six times a year at the College of Pharmacy or elsewhere in the Twin Cities. Pharmacy students are always welcome at these meetings and are eligible to membership in the Branch.

The Sem. Bot., organized in 1886 at the University of Nebraska, has established an allied convocation at the University of Minnesota. It is essentially a research society in Botany, composed of the botanical staff and of advanced students in the department. It meets alternately in convocation and in chapter to present the results of investigation, and for discussion.

DRAMATIC ORGANIZATIONS

The Masquers (University Dramatic Club).—The club was organized in 1898 for the purpose of producing the best modern and classic pieces, plays which are not usually seen on the local professional stage. Two plays are given each year, after careful training under an experienced dramatic coach. Since the inauguration of "University Weeks" the Dramatic Club has been afforded the unusual opportunity of producing their spring play in each of the towns on the extension circuit. Active membership is composed of students who qualify by trials soon after the beginning of each University year.

MUSICAL ORGANIZATIONS

The Euterpean Club is a regularly organized body of singers, composed of forty of the women students of the University. The selection of voices is made at the beginning of each school year. The club is under the direction of Professor Scott.

The Glee and Mandolin Clubs give a public concert each year at the University and make a tour of the State during the holidays.

The University Band is organized as a part of the military system of the University and is composed of about sixty musicians. It is under the efficient leadership of an instructor in music, and furnishes music for military and many other University affairs.

ATHLETIC ORGANIZATIONS

Athletics.—The control of athletics is under the University Senate. It has provided for their supervision by the enactment of the following by-laws:

There shall be two standing committees on physical activities: (a) committee on intramural sports and physical education, (b) committee on intercollegiate athletics.

(a) The Committee on Intramural Sports and Physical Education shall be composed of seven members, five recommended by the President from the Faculty, and the heads of the departments of physical education for men and for women. It shall have supervision of the gymnasium and the athletic grounds of the University including Northrop Field, except so far as and at such times as these grounds and this field may be used for intercollegiate athletics. It shall have the supervision of intramural sports and physical education for men and women. It shall have no jurisdiction over intercollegiate athletics.

(b) The Committee on Intercollegiate Athletics shall be composed of nine members, five faculty members to be recommended by the President of the University, two alumni members to be recommended by the athletic committee of the Alumni Association, and two student members to be recommended by the student members of the Athletic Board of Control.

This committee shall appoint one of its faculty members to have supervision of tickets. He shall be responsible for all tickets and other sources of income and shall see that the ticket committee of the Athletic Board of Control files with the treasurer a complete ticket report for each game, showing tickets issued, tickets sold, complimentary tickets, and unused tickets, together with a statement of the

actual cash received. The member so appointed shall become one of the two faculty members of the Athletic Board of Control and serve as chairman of the ticket committee of said board.

This committee shall also appoint one of its faculty members to have supervision of auditing. He shall have general supervision of all expenditures, and no bills shall be paid or debts incurred unless approved by him. The member so appointed shall become the second faculty member of the Athletic Board of Control, and serve as chairman of the auditing committee of said board.

This Committee on Intercollegiate Athletics shall constitute the eligibility committee, and shall decide upon all questions of students' eligibility to participate in intercollegiate sports. It shall have supervision of Northrop Field and the grandstands and the seats thereon, in so far and at such times as it may be used for intercollegiate athletics. The committee shall satisfy itself of the safety of all stands before allowing them to be used.

The method of administering in detail the business of the Athletic Association shall be subject to the approval of this committee; this committee is given entire control of intercollegiate athletics, subject to the constant revision and ratification of the University Senate.

The five members chosen from the Faculty at large to serve on these two committees, (a) and (b), shall be the same persons.

The University Athletic Association is a voluntary association composed of members of the Faculty and students. Its object is to promote the best interests of athletics at the University. All male professors and male students are eligible to membership by subscribing to the constitution.

The Board of Control of this organization is the initiative body in all intercollegiate matters at the University. It is composed of the following persons: the officers of the association, five student members chosen, one by the Academic, Education, and Graduate colleges; one by the Engineering, Mines, and Chemistry colleges; one by the Medical, Dental, and Pharmaceutical Colleges; one by the Law School; and one by the College of Agriculture; two faculty members, to be chosen by the Senate Committee on Intercollegiate Athletics, and two Alumni members, to be chosen by the Board of Directors of the Athletic Alumni Association.

The Women's Athletic Association is organized to promote health, physical efficiency, and athletic accomplishment among the women students. Contests are conducted in gymnastic work, organized games, and various sports for class and individual honors, and emblems are awarded. The Association works in close co-operation with the Department of Physical Education for Women.

Northrop Field.—This field, comprising about six acres, lies immediately adjoining the Armory. It contains a modern cinder track, tennis courts, baseball diamond, and football gridiron. The grand stands have a seating capacity of about fifteen thousand. A large portion of this field was a gift to the University from the heirs of the late John S. Pillsbury, and the brick wall surrounding it is the gift of his son, Mr. A. F. Pillsbury. It is generally conceded to be one of the finest fields in the West.

ALUMNI ORGANIZATIONS

The following named colleges, schools, and departments maintain their own individual alumni associations: Science, Literature, and the

Arts; Engineering and the Mechanic Arts; Agriculture; Law; Medicine and Surgery; Homeopathic Medicine and Surgery; Dentistry; Pharmacy; Mines; Education; Chemistry.

The General Alumni Association is an organization which includes alumni and former students of all departments of the University. It represents the alumni in all matters not specifically within the province of any single college, school, or department association. Its affairs are controlled by a board of directors chosen by the various college or department associations—each association having two members on the board. The purpose of this association is to unite the alumni and keep them informed about each other and the University and to serve the University in any way that may open for service. The Association maintains permanent offices, open the year around, in charge of a secretary who devotes his whole time to the work of the Association. The Association publishes a weekly newspaper during the college year and stands ready at any time to furnish information concerning the University or its alumni to anyone interested.

PUBLICATIONS

Research Publications of the University of Minnesota.—These were begun in 1912 with the support of a special appropriation by the Legislature. These publications will contain the results of original investigations by members of the University. They appear in the form of several series of studies, which will offer opportunity for the publication of large monographs and of papers of special importance to the people of this State, for which insufficient provision has been made heretofore.

The Minnesota Daily is published five times each week during the University year by an organization of University students.

The Junior Annual, called "The Gopher," is a book published annually by the junior class of the University.

The Agrarian is a book published annually by the senior class of the School of Agriculture.

The Minnesota Magazine is a monthly magazine devoted to the cultivation of literary taste and effort among the students of the University. It is managed by a board of editors chosen from the student body.

The Minnesota Alumni Weekly is published each Monday during the University year, thirty-six numbers in all. It is published in the interests of the alumni and the University and is devoted to such news of the alumni and the University as will be of interest to the alumni.

The Minnesota Engineer of the Society of Engineers is published quarterly. It is devoted to the publication of articles upon engineering subjects by professors and students.

The North Woods is the official organ of the Minnesota State Forestry Association. It is edited by the Forestry Department of the University and is devoted to the advancement of the forestry movement, with special emphasis on farm forestry.

The School of Mines Bulletin is published annually in April. It is

devoted entirely to information concerning the alumni of the School of Mines. A complete record of each alumnus is published from the time of graduation to the time of publication of the Bulletin. The School of Mines Society issues this publication and sends it to every alumnus of the school.

The Minnesota Farm Review is a paper published and managed by the Alumni Association of the School of Agriculture. It is the official organ of the Alumni Association and the Farmers' Club. The *Review* is intended to be a medium through which former students may keep in touch with the Agricultural School and with one another. It also endeavors to bring the farmers of the State into closer touch with the School, the College, and the Experiment Station. To this end, the paper strives to present the latest progress in the experimental work of the various stations and to call attention to the most practical farm practices.

The Botanical Survey publishes *Minnesota Botanical Studies* and *Minnesota Plant Life*. The former is devoted to the results of investigations carried on in the Survey and in the Department of Botany. The latter is a series of popular booklets, treating of the plants of the State. In addition, the Survey publishes at intervals semi-popular scientific monographs, such as *Minnesota Plant Life*, *Minnesota Plant Diseases*, and *Minnesota Freshwater Algae*.

WOMEN STUDENTS

After June first, the Registrar will supply a list of boarding and rooming places recommended for women students. In September as soon as registration begins other addresses may be had by application to the Dean of Women, Shevlin Hall. The houses thus recommended make it their particular object to care for the women students of the University. Rooms in them are rented only to women, and parlors are provided in which callers may be received.

While the University has confidence in the houses on its list, it does not advise anyone to engage a room without seeing it. There should always be a definite understanding with the householder as to rates, time of payment, vacation charges, the period for which the room is engaged, and the privileges and rules of the house. Parents are urged to give as careful attention as possible to finding suitable and comfortable rooms for their daughters. In this, as in other matters affecting the well-being of the women students, the Dean of Women is glad to be of any service within her power.

Young women who wish to earn a part of their expenses may generally learn of opportunities by communicating with the Dean of Women. During the college year she holds office hours every week day in the council room in Alice Shevlin Hall. At such times she welcomes any woman student who cares to come to her, whether for advice, information, or an informal talk.

Sanford Hall.—The University opened in November, 1910, a dormitory for the accommodation of a part of the women students. In honor of Maria L. Sanford, Emeritus Professor of Rhetoric, this dormitory is named Sanford Hall. It is situated on the corner of Eleventh and University Avenues, Southeast. It furnishes a home for ninety girls, about one-half of whom may be freshmen. The charge for room and board is \$225 for the University year. Applications should be sent to the Director of Sanford Hall, University of Minnesota.

Shevlin Hall.—Through the generosity of the late Thomas H. Shevlin, the University now possesses in Alice Shevlin Hall a building admirably designed and equipped for the use of its women students. It is a two-story and basement structure, the material used being pressed brick with stone trimmings. It has a frontage of one hundred and fourteen feet on Pillsbury Avenue and a depth of fifty-five feet. The purpose of this building is to furnish suitable rest and study rooms for the women attending the University. A lunch room in which luncheon is furnished daily on the cafeteria plan and in which "spreads" and banquets are given, is one of the useful and attractive parts of the building.

The Health of the Students.—It is the purpose of the University to safeguard and promote the health of its students in every reasonable way. A physician (the Director of Health and Physical Education for Women) holds regular office hours for consultation and advice, and investigates

cases of illness occurring in the dormitory and the boarding houses. In case medical treatment is necessary the students are referred to private practicing physicians. A resident trained nurse in Sanford Hall affords direct supervision of health there, and visits students in boarding houses when necessary. Lectures on the conservation and promotion of health are given to all newly entering students, and various forms of exercise for the promotion of health are offered in the gymnasium. All newly entering students are required to take a physical examination during registration week in the autumn, and each year thereafter students are required to report to the Director of the Department concerning their physical condition. In addition to this the Director holds regular office hours at which any students are welcome who wish to consult her concerning health matters.

The Women's Athletic Association.—See under Athletic Organizations, page 64.

The Women's Gymnasium.—The gymnasium occupies one wing of the Armory. The gymnasium room itself is light and airy, and of moderate size, but the dressing-room facilities are limited, thus the number of students who can be accommodated is seriously restricted. Work, however, of various types, is offered to all students up to the capacity of the gymnasium, and academic credit is given for advanced work. The opportunities for physical work are extended by the use of the Armory natatorium at certain hours, the tennis courts, and the Hippodrome skating rink. The Physical Education Department and the Women's Athletic Association work are in close co-operation, and the Women's Athletic Association offers emblems for excellence in the various forms of exercise which are carried on by the Department.

Note.—See Courses in Physical Education for Women.

The Women's Self-Government Association.—This organization is open to all women students of the University. The annual membership dues are fifty cents. The administrative power of the Association is vested in an Executive Board which consists of the four officers of the Association, four class representatives, and six committee chairmen. The purpose of the organization is to create a sense of unity and fellowship among the women, to promote and to maintain the highest standards of university life, and to regulate all matters of student conduct not falling under the jurisdiction of the Faculty. To this end, regular meetings of the whole Association are held, and a program of social affairs is prepared for all the women of the University.

The headquarters of the Women's Self-Government Association are in Alice Shevlin Hall. Here members will be in readiness during the opening days to meet new students and to serve them in every possible way.

ADMISSION

Admission to the colleges or schools of the University which accept students direct from the High School is either by certificate or examination, or both. The candidate must offer fifteen units of high school work so chosen as to include those subjects required by the college or school which he desires to enter. No candidate will be admitted with less than fifteen units of the required grade, except to the College of Pharmacy and the School of Agriculture for which graduation from the High School is not required. The Enrollment Committee may, however, authorize substitutions in the list of required subjects to the extent of one unit in case the candidate did not have an opportunity to take all the required subjects, provided that no substitutions shall be made for the mathematics required in Engineering and Mining courses.

No new student will be admitted to the work of the second semester unless he brings from another college a certificate of advanced standing showing his qualification to continue the second semester's work.

Under *Admission Groups* is shown the minimum number of units that will be accepted in any one subject by any college of the University. For a statement of the specific units required by the various colleges of the University and the maximum and minimum number of units accepted in any subject or group, see *Requirements of Individual Colleges*, pages 72-76.

ADMISSION BY EXAMINATION

Entrance examinations are offered at the University during the opening week, September 8 to 12. Candidates entering by this method must pass examinations in fifteen units so chosen as to satisfy the specific requirements of the college to which entrance is desired. (See *Requirements of Individual Colleges*.) Certificates from the College Entrance Examination Board and from the High School Board are accepted in lieu of examinations except in the Mathematics required for admission to the four-year courses in the School of Mines. For statement of examinations for students entering on certificate, see under *Admission by Certificate*.

ADMISSION BY CERTIFICATE

Graduates of the following courses, provided their preparation satisfies the specific requirements of the college they desire to enter, will be admitted to the freshmen class except where entrance examinations are required.

1. Any four-year course of a Minnesota State High School or other accredited school in the State.
2. A four-year course of schools in any other state accredited to the state university of that state.

3. The Advanced Latin and Advanced English course of the Minnesota State Normal Schools.

Admission by certificate to the Colleges of Science, Literature, and the Arts, Engineering, Agriculture, Chemistry, and Dentistry is governed by the following regulations. For regulations governing the admission to Colleges of Law, Medicine and Surgery, Mines, and Education, see under *Requirements of Individual Colleges*, pages 72-76.

1. The applicant for admission must present to the Registrar the principal's certificate containing his record on all the studies which were counted toward graduation. All records shall be entered on this certificate as *passed*, *passed with credit*, or *passed with honor*.*

To facilitate the operation of this rule, each accredited school is expected to keep its record of standings in these three grades or else show by a printed statement in the record book and in the catalogue of the school, how the marks in use are to be translated into these grades.

2. Candidates for admission on certificate must have an average record in the subjects counted for admission of *pass with credit*. For the purpose of this average a *pass* is offset by a *pass with honor*. Candidates are therefore admitted provided they have at least as many semester marks of *pass with honor* as they have semester marks of *pass*.

Certificates from the College Entrance Examination Board and from the State High School Board are accepted as satisfying the scholarship requirement.

Candidates entering on certificate shall not be examined for admission on subjects which are lacking or below the required grade, except on presentation to the Enrollment Committee of satisfactory evidence that they have done adequate special work in preparation for the examination. A certificate from the principal of the last school attended, or other person approved by the Enrollment Committee, shall constitute satisfactory evidence; and adequate special preparation shall consist of not less than thirty 60-minute hours under competent instruction on each semester subject presented for examination.

In case the records of any candidate from another state can not be translated into the grades used in this state, the Enrollment Committee shall order examinations in English and also in three other subjects chosen from three different admission groups; in Engineering and four-year Mining courses, the examinations shall include the required Mathematics. The results of such examinations shall be final.

All examinations authorized by the Committee shall be held at the same time and according to the same schedule as the regular entrance examinations.

*In per cent, these three grades are to be interpreted approximately as follows:

1. In schools having 65 as a passing mark, passed = 65-75, passed with credit = 75-90, passed with honor = 90-100.
2. In schools having 75 as a passing mark, passed = 75-80, passed with credit = 80-90, passed with honor = 90-100.

ADMISSION GROUPS

The term *unit* means not less than five recitations of forty minutes each per week for a period of thirty-six weeks. In manual subjects and kindred courses, it means the equivalent of ten recitation periods per week for thirty-six weeks.

A major series is three or more units in one of the admission groups.

A minor series is two units in one of the groups.

To form a language series at least two units of the same language must be offered.

Group A: English

English, four or three units*

- (a) Principles of rhetoric
- (b) Practice in written expression in each of the years of the course, on an average of not less than one hour a week
- (c) Classics

Group B: Languages

Latin—

- Grammar, one unit
- Caesar, four books, one unit
- Cicero, six orations, one unit
- Virgil, six books, one unit

Greek—

- Grammar, one unit
- Anabasis, four books, one unit

German—

- Grammar, one unit
- Literature, one, two, or three units

French—

- Grammar, one unit
- Literature, one, two, or three units

Spanish—

- Grammar, one unit
- Literature, one, two, or three units

Scandinavian Languages—

- Grammar, one unit
- Literature, one, two, or three units

Group C: History and Social Sciences

History—

- Ancient, to Charlemagne, one unit

- Modern, from Charlemagne, one unit

- English, one-half unit

- Senior American, one-half unit

- American Government, one-half or one unit

- Elementary Economics, one-half unit

- Commercial Geography, one-half or one unit

- History of Commerce, one-half or one unit

- Economic History of England, one-half unit

- Economic History of the United States, one-half unit

*Three units will satisfy the English requirement in the College of Engineering, and, when the applicant presents four units in one foreign language, will suffice for the other colleges.

Group D: Mathematics

Elementary Algebra, one unit	Solid Geometry, one-half unit
Plane Geometry, one unit	Trigonometry, one-half unit
Higher Algebra, one-half unit	

Group E: Natural Sciences

Physics, one unit	Physiology, one-half unit
Chemistry, one unit	Astronomy, one-half unit
Botany, one-half or one unit	Geology, one-half unit
Zoology, one-half or one unit	Physiography, one-half unit

Group F: Vocational Subjects

Not to exceed four units may be offered from the following list of vocational subjects:

Business Subjects—

Business Law, one-half unit	Advanced Bookkeeping, one unit
Business Arithmetic, one-half unit	Stenography and Typewriting, two units
Elementary Bookkeeping, one unit	

Manual Subjects—

Freehand Drawing, two units	Shop Work, two units
Mechanical Drawing, two units	Modeling and Wood Carving, one unit
Domestic Art and Science, four units	

Normal Training Subjects—

One to three units from schools giving normal courses approved by the State High School Board provided that the applicant has had one year of subsequent teaching experience.

Agriculture—

One to four units from schools receiving special state aid for Agriculture and also from other schools in which such course in Agriculture is approved by the State High School Board, as fast as the said schools are prepared to offer work in Agriculture.

REQUIREMENTS OF THE INDIVIDUAL COLLEGES

COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

1. Four years of English, or three years of English accompanied by four years of one foreign language.

2. A major and a minor series, each chosen from one of the admission groups B, C, D, E. Either the major or the minor series must be in Mathematics.

3. Enough additional work to make in all fifteen units of which not more than four may be in Group F.

4. See *Admission by Certificate*, pages 69-70.

COLLEGE OF ENGINEERING AND THE MECHANIC ARTS

1. English.....Three units
2. Mathematics.....Three units
3. Chemistry.....One unit
4. A minor series chosen from one of the groups B, C, and E. (The required Chemistry may be included in a science series.)
5. Enough additional work to make in all fifteen units of which not more than three may be in group F, with the provision that not more than one unit will be accepted in each of the following subjects: Freehand Drawing, Mechanical Drawing, and Shop Work; not more than two units in Agriculture, and not less than two units in Stenography and Typewriting if that subject be offered.
6. See *Admission by Certificate*, pages 69-70.

DEPARTMENT OF AGRICULTURE

College of Agriculture

Course in Agriculture

1. English, four units, or three units accompanied by four units of one foreign language.
 2. A major series of three or more units and a minor series of two units, each series chosen from one of the admission groups, B, C, D, E. Either the major or the minor series must be in Mathematics, and both shall not be in the same group.
 3. Enough additional work to make in all fifteen units, of which not more than four may be in Group F.
- Prospective students in Agriculture or Forestry are urged to present both Higher Algebra and Physics for entrance. This will permit the selection of vocational electives during the college course in place of Mathematics and Physics otherwise required.
4. See *Admission by Certificate*, pages 69-70.

Course in Home Economics

1. English, four units, or three units accompanied by four units of one foreign language.
2. A major and a minor series, each chosen from one of the groups B, C, D, E. Either the major or the minor series must be in Mathematics, and both shall not be in the same group.
3. Enough additional work to make in all fifteen units of which not more than four may be in Group F.
4. See *Admission by Certificate*, pages 69-70.

College of Forestry

Same as for the Course in Agriculture under College of Agriculture.

School of Agriculture (Three-Year Course)

Applicants must be 17 years of age, and must have completed eighth grade work or its equivalent. Male students must have six months' farm practice before entrance. For information concerning short courses, see Bulletin of the School of Agriculture.

THE LAW SCHOOL

Students desiring to enter the Law School must first complete two full years (not less than fifty-eight credits) of collegiate work in science, literature, and the arts at this or some other university or college of equal rank. See admission to the College of Science, Literature, and the Arts, page 72.

A special pre-legal course is offered by the Academic College covering those subjects which are particularly desirable as a preliminary for the study of Law.

The Law Faculty recommends that prospective law students devote the major part of their time while in High School to the study of the following subjects: English, Latin, History, Mathematics, French, and Science.

THE MEDICAL SCHOOL

Applicants for admission to the Medical School must present credentials showing the completion of a regular four-year high school course, including two units of Latin.

Students entering in September, 1912, or thereafter, must have received the bachelor's degree in arts or science from this University or some other university or college of equal rank, or must register in one of the combined courses offered by the College of Science, Literature, and the Arts and the Medical School so as to receive the bachelor's degree before graduating in Medicine.

The following collegiate subjects are required of all candidates: Rhetoric, 6 credits; General Inorganic Chemistry, 6 credits; Physics, 8 credits; Zoology (preferred) or Botany, 6 credits; sufficient German or French to insure a reading knowledge. This language requirement will ordinarily involve one or two years of college work depending upon prior high school training. The head of the appropriate department shall determine the students' qualification in this matter. In addition at least one social science course must be completed.

For requirements for admission to the College of Science, Literature, and the Arts, see page 72.

COLLEGE OF DENTISTRY

1. English, four units, or three units accompanied by four units of one foreign language.

2. Chemistry, one unit.

3. A major and a minor series, each chosen from one of the admission groups B, C, D, E. (The required Chemistry may be included in a science series). Either the major or the minor series must be in Mathematics.

4. Enough additional work to make in all fifteen units of which not more than four may be in Group F.

Because of the limited capacity of the College of Dentistry, the number of freshmen admitted will be limited to ninety. The student who desires to enter this college in September, 1913, should fill out and send to the University a special application blank, which will be sent him as soon as his regular credential blank has been received by the Registrar. Both blanks should be in the Registrar's hands not later than August 1st.

The student's entire scholastic and industrial record will be taken into consideration in determining admission, and applicants will be notified promptly concerning the possibility of their matriculation.

COLLEGE OF PHARMACY

English.....	Two units
Elementary Algebra.....	One unit
Plane Geometry.....	One unit
Physics.....	One unit
Latin.....	Two units

Two years of a modern language may be substituted for the second year of Latin. In the two-year course students may carry not more than two entrance conditions; in the three-year course, not more than three. All entrance conditions must be removed during the first year.

SCHOOL OF MINES

A certificate of graduation from an accredited school will be accepted for admission to the School of Mines, subject to the specific requirements noted below.

Five-Year Courses

1. English, four units, or three units accompanied by four units of one foreign language.

2. Mathematics, two units, including Elementary Algebra and Plane Geometry.

3. Enough additional work to make in all fifteen units, of which not more than four may be in Group F.

Applicants for admission to the above courses need not take entrance examinations in Mathematics.

Four-Year Courses

1. English, four units, or three units accompanied by four units of one foreign language.
2. Mathematics, three units, including Elementary and Higher Algebra, Plane and Solid Geometry.
3. Enough additional work to make in all fifteen units of which not more than four may be in Group F.

Entrance examinations in Elementary and Higher Algebra, Plane and Solid Geometry are required of all candidates for admission to these courses.

THE SCHOOL OF ANALYTICAL AND APPLIED CHEMISTRY

1. English, four units, or three units accompanied by four units of one foreign language.
2. A major or a minor series, each chosen from one of the admission groups B, C, D, E. One of the series must be in Mathematics.
3. Enough additional work to make in all fifteen units of which not more than four may be in Group F.

Students entering the Analytical Course or the five-year course in Applied Chemistry must present one-half unit of Higher Algebra.

4. See *Admission by Certificate*, pages 69-70.

COLLEGE OF EDUCATION

Applicants for admission to this College must present credentials showing:

1. The completion of a regular four-year high school course.
2. The completion of two full years of collegiate work (not less than sixty credits) in science, literature, and arts at this or some other college or university of equal rank.

Graduation from Advanced Graduate Normal Courses (two years beyond the high school) is considered equivalent to (1) and (2) above.

Graduates of a five-year Normal Course are allowed forty-two credits and are admitted to the College as unclassified students pending the completion of eighteen additional credits.

ADMISSION AS UNCLASSIFIED STUDENTS

Only by permission of the proper officers and upon the presentation of satisfactory reasons for not taking the regular course will an applicant be admitted as an unclassified student. He must take the same examinations or present the same credentials as are required of those who enter the freshman class. (See classes 1 and 2.) Exceptions can be made only upon vote of the appropriate Faculty. A new application must be made each semester to the committee in charge. No student will be admitted as unclassified after the third week. No unclassified student shall be admitted to the School of Mines.

ADMISSION TO STUDY MUSIC

Students who enter the University for the express purpose of studying Music, must take the same examinations or present the same credits that are required by those who apply for admission to the freshman class. (See classes 1 and 2.) No student is admitted for the purpose of studying Music unless he presents a certificate from the Department of Music showing that he is qualified to pursue the courses offered.

ADMISSION TO ADVANCED STANDING

1. *From Other Colleges*

This university accepts records from all reputable colleges and universities for credit to advanced standing. Such records are accepted as far as they are equivalent to the work done in this institution. In bringing records from other institutions, the certificate must be upon the official blank of the institution granting the certificate and should show:

- (a) The subject studied; if a language, the books read, etc.
- (b) The time spent upon each subject.
- (c) Ground covered in laboratory work in case of laboratory subjects.
- (d) The result. The exact grades should be stated, accompanied with an explanation of the marking basis employed.

Candidates wishing to gain credits for advanced standing by examination are allowed examinations without additional charge, providing they be taken within six weeks after matriculating.

2. *From Minnesota Normal Schools*

Graduates of the Advanced Graduate course of a Minnesota State Normal School are admitted to the College of Science, Literature, and the Arts with advanced standing equivalent to one year's credit. Graduates of such advanced courses are admitted to the College of Education with an allowance of sixty credits toward graduation.

Individual graduates of the Advanced Latin course (five-year) or of the Advanced English course (five-year) of a Minnesota State Normal School who, on the basis of maturity and ability, present certificates of special fitness from the President of the Normal School, will be admitted with advanced standing, equivalent to one year's credit. Graduates of such courses are admitted to the College of Education with an allowance of forty-two credits toward graduation.

3. *Miscellaneous*

Credit in Shop Work and Drawing will be given in the College of Engineering for work in manual training, or for practical experience, provided the applicant gives evidence of proficiency in such work, and is qualified to pursue advanced work. The student must register for the regular work and at the same time make application to the department concerned for advanced credit.

LIST OF ACCREDITED SCHOOLS

Graduates of the following Minnesota state high schools will be admitted to the University of Minnesota without conditions, provided that their credentials satisfy the specific requirements of the college to which entrance is desired.

Ada	Cokato	Halstad
Adrian	Coleraine	Harmony
Aitkin	Greenway	Hastings
Akeley	Olcott	Hawley
Albert Lea	Cottonwood	Hector
Alden	Crookston	Henderson
Alexandria	Dassel	Herman
Amboy	Dawson	Heron Lake
Annandale	Delano	Hibbing
Anoka	Deer River	Hinckley
Appleton	Detroit	Hopkins
Argyle	Dodge Center	Houston
Arlington	Duluth	Howard Lake
Atwater	Central	Hutchinson
Aurora	Industrial	International Falls
Austin	Eagle Bend	Jackson
Bagley	E. Grand Forks	Janesville
Barnesville	Elbow Lake	Jordan
Belle Plaine	Elk River	Kasota
Bemidji	Elmore	Kasson
Benson	Ely	Kenyon
Bird Island	Eveleth	Kerkhoven
Biwabik	Excelsior	Lake Benton
Blackduck	Fairfax	Lake City
Blooming Prairie	Fairmont	Lake Crystal
Blue Earth	Faribault	Lake Park
Brainerd	Farmington	Lakefield
Breckenridge	Fergus Falls	Lamberton
Brown Valley	Fertile	Lanesboro
Buffalo	Fosston	Le Roy
Buhl	Frazee	Le Sueur
Caledonia	Fulda	Le Sueur Center
Cambridge	Gaylord	Litchfield
Canby	Gilbert	Little Falls
Cannon Falls	Glencoe	Long Prairie
Cass Lake	Glenwood	Luverne
Chaska	Graceville	Lyle
Chatfield	Grand Meadow	Mabel
Chisholm	Grand Rapids	McIntosh
Clarkfield	Granite Falls	Madelia
Cloquet	Hallock	Madison

Mankato	Paynesville	Sleepy Eye
Mantorville	Pelican Rapids	South St. Paul
Maple Lake	Perham	Spring Grove
Mapleton	Pine City	Spring Valley
Marshall	Pine Island	Springfield
Milaca	Pipestone	Staples
Minneapolis	Plainview	Stephen
Central	Preston	Stewartville
East	Princeton	Stillwater
North	Red Lake Falls	Thief River Falls
South	Red Wing	Tracy
West	Redwood Falls	Two Harbors
Minneota	Renville	Tyler
Montevideo	Rochester	Virginia
Montgomery	Royalton	Wabasha
Monticello	Rush City	Wadena
Moorhead	Rushford	Walker
Mora	St. Charles	Warren
Morris	St. Cloud	Waseca
Morton	St. James	Waterville
Mountain Lake	St. Louis Park	Wayzata
New Prague	St. Paul	Welcome
New Richland	Central	Wells
New Ulm	Humboldt	West Concord
North St. Paul	John A. Johnson	Wheaton
Northfield	Mechanic Arts	White Bear
Norwood—Young	St. Peter	Willmar
America	Sandstone	Windom
Olivia	Sauk Center	Winnebago
Ortonville	Sauk Rapids	Winona
Osakis	Shakopee	Winthrop
Owatonna	Sherburn	Worthington
Park Rapids	Slayton	Zumbrota

Graduates of the following private schools will be admitted to the freshman class under the same conditions governing admission of high school graduates, provided that the regular four-year course taken satisfies the specific requirements of the college to which entrance is desired and provided, also, that the student be recommended by the principal of the school for admission to the University.

St. Mary's Hall, Faribault	The Winona Seminary, Winona
St. Paul Academy, St. Paul	St. John's College, Collegeville
Shattuck Military Academy, Faribault	St. Thomas College, St. Paul
Stanley Hall, Minneapolis	Villa Maria, Frontenac
Windom Institute, Montevideo	Park Region Luther College, Fergus Falls
Concordia College, Moorhead	Minnesota College, Minneapolis

Pillsbury Academy, Owatonna
 St. Joseph's Academy, St. Paul
 Graham Hall, Minneapolis
 Albert Lea College, Prep. Dept.,
 Albert Lea
 St. Paul's College, St. Paul Park
 The Loomis School, St. Paul
 The Backus School for Girls, St.
 Paul
 The College of St. Catherine, St.
 Paul
 St. Margaret's Academy, Minne-
 apolis

Bethel Academy, St. Paul
 Lutheran Ladies' Seminary, Red
 Wing
 Cathedral High School for Girls,
 Duluth
 Blake School for Boys, Minne-
 apolis
 Bethlehem Academy, Faribault
 Cathedral High School for Boys,
 Duluth
 Villa Sancta Scholastica, Duluth
 Convent of St. Benedict, St.
 Joseph

DESCRIPTION OF SUBJECTS ACCEPTED FOR ADMISSION

The following statements indicate in a general way the preparation which the University expects in the various subjects accepted for admission. The number of units in parentheses following each subject indicates the maximum credit accepted by any one college of the University and does not mean that all colleges will accept the maximum stated. See pages 72 to 76 for statements of the requirements of the individual colleges.

English (four units)

In order to secure a definite plan of study and unity of method on the part of preparatory schools, the entrance requirement in English is outlined below somewhat in detail. To satisfy this requirement a course of not less than four hours per week must be pursued during the time specified above. The headings under which instruction will naturally fall are:

- (a) The Principles of Rhetoric
- (b) Practice in Written Expression
- (c) English Classics

(a) The work in the principles of rhetoric should include the principles and technical terms of ordinary texts upon the subject, whether acquired by the direct study of such text or mainly by the study of selected English masterpieces. It should not be forgotten that this is not an end in itself, but simply a means of teaching the student the correct use of English.

(b) An average of not less than one hour each week in each of the years of the course should be devoted to practice in written expression, subject to the criticism, either oral or written, of the teacher. The instructor may choose such topics as local conditions may require or make most profitable; but whatever line of work is pursued, the student should be taught to use language correctly and forcibly and learn to express himself clearly and logically in writing.

(c) The preparation in English Literature should consist in the study of a limited number of English classics and in the reading of a larger number. The following lists of books, headed respectively *reading* and *study*, are quoted from the report of the National Conference on Uniform Entrance Requirements in English. They will be found suggestive to those preparing students for the University. In connection with both lists, the student should be trained in reading aloud and be encouraged to commit to memory some of the more notable passages both in verse and in prose. As an aid to literary application, he is further advised to acquaint himself with the most important facts in the lives of the authors whose works he reads and with their place in literary history.

a. *Reading*.—The aim of this course is to foster in the student the habit of intelligent reading and to develop a taste for good literature, by giving him a first-hand knowledge of some of its best specimens. He should read the books carefully, but his attention should not be so fixed upon details that he fails to appreciate the main purpose and charm of what he reads.

With a view to large freedom of choice, the books provided for reading are arranged in the following groups, from which at least ten units are to be selected, two from each group:

I. *The Old Testament*, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther; the *Odyssey*, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII; the *Iliad*, with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI; Virgil's *Aeneid*. The *Odyssey*, *Iliad*, and *Aeneid* should be read in English translations of recognized literary excellence.

For any unit of this group a unit from any other group may be substituted.

II. Shakespeare's *Merchant of Venice*; *Midsummer Night's Dream*; *As You Like It*; *Twelfth Night*; Henry the Fifth; Julius Caesar.

III. Defoe's *Robinson Crusoe*, Part I; Goldsmith's *Vicar of Wakefield*; either Scott's *Ivanhoe* or Scott's *Quentin Durward*; Hawthorne's *House of Seven Gables*; either Dickens' *David Copperfield* or Dickens' *Tale of Two Cities*; Thackeray's *Henry Esmond*; Mrs. Gaskell's *Cranford*; George Eliot's *Silas Marner*; Stevenson's *Treasure Island*.

IV. Bunyan's *Pilgrim's Progress*, Part I; *The Sir Roger de Coverley Papers* in the *Spectator*; Franklin's *Autobiography* (condensed); Irving's *Sketch Book*; Macaulay's *Essays on Lord Clive and Warren Hastings*; Thackeray's *English Humorists*; *Selections from Lincoln*, including at least the two Inaugurals, the Speeches in Independence Hall and at Gettysburg, the Last Public Address, and Letter to Horace Greeley, along with a brief memoir or estimate; Parkman's *Oregon Trail*; either Thoreau's *Walden* or Huxley's *Autobiography* and selections from *Lay Sermons*, including the addresses on Improving Natural Knowledge, A Liberal Education, and A Piece of Chalk; Stevenson's *Inland Voyage* and *Travels with a Donkey*.

V. Palgrave's *Golden Treasury (First Series)*, Books II and III, with especial attention to Dryden, Collins, Gray, Cowper, and Burns; Gray's *Elegy in a Country Churchyard* and Goldsmith's *Deserted Village*; Coleridge's *Ancient Mariner* and Lowell's *Vision of Sir Launfal*; Scott's *Lady of the Lake*; Byron's *Childe Harold*, Canto IV, and *Prisoner of Chillon*; Palgrave's *Golden Treasury (First Series)*, Book IV, with especial attention to Wordsworth, Keats, and Shelley; Poe's *Raven*, Longfellow's *Courtship of Miles Standish*, and Whittier's *Snow Bound*; Macaulay's *Lays of Ancient Rome* and Arnold's *Sohrab and Rustum*; Tennyson's *Gareth and Lynette*, *Lancelot and Elaine*, and *The Passing of Arthur*; Browning's *Cavalier Tunes*, *The Lost Leader*, *How They Brought the Good News from Ghent to Aix*, *Home Thoughts from Abroad*, *Home Thoughts from the Sea*, *Incident of the French Camp*, *Herve Riel*, *Pheidippides*, *My Last Duchess*, *Up at a Villa—Down in the City*.

b. *Study*.—This part of the requirement is intended as a natural and logical continuation of the student's earlier reading, with greater stress laid upon form and style, the exact meaning of words and phrases, and the understanding of allusions. For this close reading are provided a play, a group of poems, an oration, and an essay, as follows:

Shakespeare's *Macbeth*; Milton's *L'Allegro*, *Il Penseroso* and *Comus*; either Burke's *Speech on Conciliation with America* or both Washington's *Farewell Address* and Webster's *First Bunker Hill Oration*; either Macaulay's *Life of Johnson* or Carlyle's *Essay on Burns*.

Elementary Algebra (one unit).—Addition, subtraction, multiplication, division, factoring, highest common divisor, lowest common multiple, fractions, equations with one, two, and several unknown quantities followed by problems, theory of exponents, involution (including the binomial theorem for positive integral exponents), evolution, radicals, ratio, proportion and quadratic equations, with problems.

Higher Algebra, First part (one-half unit).—While this subject includes few topics not named under Elementary Algebra, a much fuller treatment of those topics is expected in this work. Principles as well as processes should be learned, theorems and rules should be rigorously demonstrated, the exercises and problems should be more difficult, and students should be drilled in short methods and rapid work. Unless candidates have a good knowledge of the fundamental topics named below they are not prepared to pursue successfully at the University the Second Part of Higher Algebra.

The topics are addition, subtraction, multiplication, division, factoring, highest common divisor, lowest common multiple, fractions, theory of exponents, involution, evolution, surds, imaginaries, simple equations with one, two, and several unknown quantities, inequalities, ratio and proportion, arithmetical and geometrical progressions, quadratic equations and numerous problems requiring both simple and quadratic equations.

Plane Geometry (one unit).—Any of the standard texts on this subject will furnish the necessary preparation. Isoperimetry, symmetry, and maxima and minima of figures are not required. The exercises requiring solutions and demonstrations should not be omitted.

Solid Geometry (one-half unit).—Any of the standard texts on this subject will furnish the necessary preparation. The exercises requiring solutions and demonstrations should not be omitted.

Latin Grammar (one unit).—This will include the subjects of orthography, etymology, and syntax. Proficiency is particularly desired in the following subjects: the analysis of the verb forms, the rules of syntax, and the principal parts of the irregular verbs.

Caesar (one unit).—First four books or selections from the seven books equivalent to four; or three books, with thirty pages of Cornelius Nepos, or two books with sixty pages of Cornelius Nepos. The student is expected to be familiar with the life of Caesar and an account of his wars.

Cicero (one unit).—Any six orations from the following list: *Against Cataline*, *Poet Archias*, *Ligarius*, *Marcellus*, *Manilian Law* (to count as two orations), the fourteenth *Phillipic*. The student should also be familiar with the life of Cicero.

Virgil (one unit).—Six books of the *Aeneid*, or five of the *Aeneid* and one of the *Metamorphoses* of Ovid, or the *Eclogues*. The student should be familiar with the life of Virgil and an account of his times and writings. A correct rhythmical reading of the text is to be encouraged.

NOTE.—In place of the work specified above the University also accepts the work recommended in the report of the Cleveland Commission on College Entrance Requirements in Latin.

Greek Grammar (one unit).

Xenophon's Anabasis, four books (one credit).

German (four units).

First year the student should acquire:

(1) A correct pronunciation, training of the ear, eye, and organs of speech.

(2) A vocabulary of a thousand words of every-day use; facility in combining these words into simple sentences. As a means to this, 100 to 150 pages of easy narrative prose and poetry should be read, from which questions and answers may be formed. To test the student's memory and knowledge of the word-order he should relate or write out the story anew in his own words.

(3) From two to three hundred German idioms.

(4) The essentials of German grammar, to be taught by means of oral and written exercises based upon the reading lessons.

Second year the pupil should:

(1) Read one hundred and fifty to two hundred pages of prose and poetry.

(2) Practice reading smoothly and with expression.

(3) Carefully translate selected passages of the text into idiomatic English. To translate easy sentences which the student already understands is a waste of time.

(4) Translate sentences from English into German, using words and idioms of the text read.

(5) Study topically German grammar, chief rules of orthography, etymology and syntax; illustrate these words, phrases, and sentences selected or composed by the student.

One or two additional years of work in literature will be accepted.

French (four units).—This work comprises the principles of French grammar, including acquaintances with the verb, regular and irregular, and ability to translate easy English sentences into French and simple French prose into English.

One or two additional years of work in literature will be accepted.

Spanish (four units).—The first year's work includes grammar and reader; second year, grammar reviewed, reading of some modern writer, composition and conversation.

One or two additional years of work in literature will be accepted.

Scandinavian Languages: Norwegian or Swedish (four units).—The student should

acquire the principles of grammar, ability to read and translate ordinary prose and easy poetry, also to translate from English, and a fair acquaintance with the history of the Scandinavian countries. Two additional years' work in literature will be accepted.

Ancient History (one unit).—This study should begin with from five to seven weeks upon the oriental peoples who have most influenced European development, and should be carried down to the establishment of Charlemagne's empire.

Modern History (one unit).—From Charlemagne to the present. It is desirable to give at least half of the year to the last period from 1789.

English History (one-half unit).—The Saxon period should be passed over rapidly. In the remainder of the work, besides the narrative, constitutional points should receive attention, and easily accessible documents, like Magna Charta, should receive careful study.

Senior American History (one-half unit).—No attempt should be made to cover the whole field in this time. Either the colonial history or the period from 1783 to 1832 offers quite enough material. In any case, considerable use should be made of collections of documents and sources.

American Government (one-half or one unit).—This should be a study of our government, national, state, and local, as it is organized and actually operated to-day. The instruction should aim to impart information essential to intelligent, active citizenship, such as the division of the government into departments, their organization and function; the methods of nominating, electing, and appointing men to office; of framing and amending constitutions, city charters, and statutes; of drawing grand and petit juries and the duty of the citizen to serve on them; the distinction between common law, state law, and constitutional law, between equity, civil, and criminal cases.

Elementary Economics (one-half unit).—In the study of Economics it is desirable to avoid two extremes, abstract theory on the one hand, and controversial questions, such as the tariff, trusts, and trade unions, on the other hand. Emphasis should be placed on historical and descriptive matter, especially relating to the economic development of England and the United States. Some good elementary text-book should be mastered and a reasonable amount of collateral reading required.

History of Commerce (one-half or one unit).—This forms the natural introduction to the study of present economic conditions. It would be well to give special attention to the economic history of England and the United States. The work should be based on a text-book, supplemented by carefully directed map work and assigned readings. This should be preceded by a year course of medieval and modern European history.

Commercial Geography (one-half or one unit).—This describes and seeks to explain the commerce of to-day. The work should cover the ways in which commerce depends on nature and on man, the development of means of transportation and communication, and a detailed study of several commercial regions of the world with reference to resources, industries, transportation facilities, and commerce. It should be based on a text-book supplemented by map work and assigned readings.

Physics (one unit).—It is suggested that the year's work be confined to four of the seven subjects mentioned below.

(1) Mechanics of solids, (2) liquids and gases, (3) sound, (4) heat, (5) light, (6) and (7) electricity and magnetism (to count as two subjects, but not to be divided).

Chemistry (one unit).—The full year's work should include a study of both the non-metals and metals with laboratory experiments illustrating the common chemical laws and the commoner chemical reactions.

Botany (one or one-half unit).—The course in Botany should extend through the school year whenever it is at all possible, even if as much time can not be given to it each week as when it occupies a single semester. The course should follow as closely as possible the nature and work of plants during the changing seasons of the year. The major portion of the work should be with living plants, naming the common plants of the neighborhood, both cultivated and native, and studying plant parts from the seed to maturity.

Zoology (one or one-half unit).—Animals should be studied as living units in their relation to one another and their environment. The aim of the teacher should be to foster a love for animate nature and to develop accuracy in observation and description.

Astronomy (one-half unit).—An elementary course in general astronomy as presented in any good modern text-book will satisfy this requirement.

Geology (one-half unit).—These subdivisions should receive special attention: physiographic geology, the building of the land and the evolution of its existing contours; geo-

dynamics, the modifying of the earth by atmosphere, water, terrestrial heat, plants, and animals; and a brief survey of historical geology.

Physiography (one-half unit).—The following topics should be emphasized: meteorology, the leading facts relating to the atmosphere and its phenomena, including some acquaintance with the work of the United States weather bureau; land sculpture, as it treats of the origin, development, and decadence of land forms; and the influence of these processes on the physical environment of man.

VOCATIONAL SUBJECTS

Not more than four units are allowed in the following vocational subjects, including business subjects, manual subjects, domestic art and science, and agriculture.

Business Subjects

Business Law (one-half unit).—The object of this study is not to make "every man his own lawyer," but rather to enable him to keep out of legal complications. Text-book supplemented by study of a few typical cases, and practice in drawing up ordinary legal papers, such as bills, notes, checks, etc.

Business Arithmetic (one-half unit).—The object is, first of all, absolute accuracy and, secondly, speed in ordinary business complications. The topics to be emphasized are fundamental operations, common fractions having as denominator 2, 3, 4, 6 and 8, a few common weights and measures, percentage and its applications, and useful short methods, especially interest and other calculation tables. The work should be based on a text-book, supplemented by numerous live exercises from current sources.

Elementary Bookkeeping (one unit).—A text-book should be employed with exercises so arranged that no two pupils will do exactly the same work, and no credit should be allowed unless the work is done neatly, accurately, and at a satisfactory rate of speed. It is suggested that double periods be provided, and all work be done in class under the eye of the instructor. The set used should include the journal, cash book, sales book, ledger, check book, bank pass book, and trial balance book.

Advanced Bookkeeping and Business Practice (one unit).—Thorough drill on standard business forms, such as bills, receipts, checks, notes, etc., also on the use and meaning of business symbols and abbreviations. The student should become acquainted with the bill book and invoice book, and loose leaf and voucher systems of bookkeeping. Each student should carry on a business of his own, first as individual, then as a partnership, and finally as a corporation. Credit on this course should mean that the student lacks only age and actual business experience to become a competent bookkeeper.

Stenography and Typewriting (two units).—This work is expected to occupy not less than two periods daily for two years. No credit should be given for either shorthand or typewriting if taken alone. Nothing but the touch method should be used in typewriting. The essentials are, first, accuracy and speed in taking dictation and transcribing notes; secondly, correct spelling, capitalization, punctuation, and paragraphing. The minimum speed at the end of the first year should be 75 words per minute in dictation and 25 words per minute on the machine; and at the end of the second year, 100 words per minute in dictation and 35 words per minute in transcribing notes. Thorough training should also be given in care of the machine, in modern methods of manifolding, and in filing papers.

Manual Subjects

Owing to the fact that drawing and shop work do not require outside preparation they should not be credited by the schools on the same basis as the academic subjects. Therefore half credits are allowed; that is, one full credit for two years of work one period daily, or for one year of work two periods daily, in each subject.

Freehand Drawing (two units).

Mechanical Drawing (two units).

Joinery (one-half unit).

Wood Turning and Cabinet Making (one-half unit).

Pattern Making and Forge Shop (one-half unit).

Machine Shop, Including Chipping, Filing, and Work on the Iron Lathe (one-half unit).

Drill Press and Iron Planer (one-half unit).

Clay Modeling (one-half unit).

Wood Carving (one-half unit).

Note restriction for the College of Engineering and the Mechanic Arts, page 73, paragraph 5.

Domestic Art and Science

Domestic Art, including Carefully Graded Exercises in Sewing (two units).

Domestic Science, including Practical Cookery and Household Economy (two units).

Agriculture

Agriculture is accepted for from one to four credits from schools receiving special state aid for Agriculture, and also from other schools in which such course in Agriculture is approved by the State High School Board, as fast as the said schools are prepared to offer work in Agriculture.

Normal Training Subjects

Normal training subjects, one to three units, are accepted from schools giving normal courses approved by the State High School Board, provided that the applicant has had one year of subsequent teaching experience.

DEGREES

The candidate for a degree must complete the requirements for graduation in his course. Any person may undergo, at suitable times, an examination in any subject, and if such person pass in all the studies and exercises of the course, he is entitled to the appropriate degree; provided, however, that at least one full year (the one immediately preceding the granting of the degree) must be spent at the University, before such degree shall be granted, and provided that examination, in every case, be held before a committee of the Faculty appointed for that purpose.

For detailed information concerning requirements, see the bulletin of the appropriate college and school.

The degrees Bachelor of Arts, Bachelor of Arts in Education, Bachelor of Science, Master of Science, Master of Arts, Master of Forestry, Doctor of Philosophy, Doctor of Science, Civil Engineer, Mechanical Engineer, Electrical Engineer, Architectural Engineer, Architect, Engineer of Mines, Engineer of Mines in Geology, Metallurgical Engineer, Bachelor of Science in Engineering, Bachelor of Science in Architecture, Chemical Engineer, Bachelor of Science in Chemistry, Bachelor of Laws, Doctor of Medicine, Graduate in Nursing, Doctor of Dental Surgery, Bachelor of Pharmacy, and Master of Pharmacy, are conferred after recommendation by the Deans of the respective colleges, by vote of the Regents.

THE UNIVERSITY STATE TEACHER'S CERTIFICATE

The University State Teacher's Certificate is granted to all graduates of the College of Education and to those graduates of the College of Science, Literature, and the Arts who fulfill the following conditions:

First: They must have maintained a good average of scholarship throughout the four years of college study.

Second: They must have the recommendation of at least one department concerned with high school studies.

Third: They must have completed Philosophy 1a or 1b and Courses 1 and 2 or Course 3 in Education, with sufficient additional work in Education to make a total of fifteen credits, including those specified in Philosophy.

This certificate by State Law authorizes students to teach in the public schools of Minnesota for two years from date. After that time, upon satisfactory evidence of success, the certificate may be made permanent by the endorsement of the Superintendent of Education and the President of the University.

EXPENSES

FEEES

Deposit Fee

At the beginning of each year, in addition to the first semester incidental fee, a deposit fee of five dollars (freshmen in Medicine and Dentistry, ten dollars) is required of every student to cover the following items:

Change of registration..... \$2.50

Examination for removal of condition, at set time. 1.00 per subject

Rental of post-office box, University post-office

(required of all)..... .50 per year

Locker rental, locker key deposit..... .50 to 1.00 per year

Case-book deposit (Law School), laboratory breakages, or damage to University property.

Penalties for late registration or late payment of fees.

A penalty fee of one dollar must be paid by all students who register or pay fees after the prescribed time. (See calendar, page v.) After the day previous to that on which classes begin, the penalty for delay increases at the rate of twenty-five cents a day.

The unused balance of the deposit fee will be returned at the end of each year. If, at any time during the college year, the amount of charges against a student exceed the amount of the deposit, a second fee of five dollars will be required.

Special Fees

The following special items may be included in the expenses of a student:

Special examination for removal of condition, at
other than the set time \$5.00

Examination on subject taken out of class 5.00

No fee for such examinations on first entering
the University, if taken within the first six
weeks

Military uniform, men 15.00

Gymnasium suit, men and women 5.00

Incidental Fees

One-half of the annual incidental fee, which includes all laboratory charges, is payable at the beginning of each semester. Cards entitling the student to admission to classes will not be issued until the fees have been paid:

Science, Literature, and the Arts:

Annual incidental fee, resident.....	\$ 30.00
Annual incidental fee, non-resident.....	60.00
Music, Courses 4 and 5 (1½ hours per week), annually.....	64.00
Courses 4 and 5 (3 hours per week), annually.....	128.00

College of Engineering and the Mechanic Arts:

Annual incidental fee, resident and non-resident.....	\$ 50.00
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College of Agriculture:

Annual incidental fee, resident.....	\$ 30.00
Annual incidental fee, non-resident.....	60.00

College of Forestry:

Annual incidental fee, resident.....	\$ 30.00
Annual incidental fee, non-resident.....	60.00
Itasca Park fee, junior year.....	5.00

Law School:

Annual incidental fee.....	\$ 65.00
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The Medical School:

Annual incidental fee for students entering in and after September, 1910.....	\$150.00
Hospital fee (junior and senior years).....	3.00
School for Nurses, preliminary course, tuition fee (no fees thereafter).....	25.00

College of Dentistry:

Annual incidental fee.....	\$150.00
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College of Pharmacy:

Annual incidental fee, two-year course.....	\$ 82.50
Annual incidental fee, three-year course.....	55.00

School of Mines:

First Year Five-Year Courses

Annual incidental fee.....	\$ 55.00
Books (estimated)	20.00
Note books and supplies (estimated)	5.00

Freshman Year

Annual incidental fee.....	\$ 55.00
Books (estimated)	25.00
Draughting instruments (estimated)	15.00
Note books and supplies (estimated)	5.00

Sophomore Year

Annual incidental fee.....	\$ 55.00
Field work { Surveying }	100.00 to 150.00
(May 1st to July 1st) { Geological }	
Books (Estimated).....	15.00
Note books and supplies (estimated)	5.00

Junior Year

Annual incidental fee.....	\$ 55.00
Field work { Metallurgy }	175.00 to 250.00
(May 1st to July 1st) { Mining }	
Books (estimated)	30.00
Note books and supplies (estimated)	5.00

Senior Year

Annual incidental fee.....	\$ 55.00
Books (estimated)	30.00
Note books and supplies (estimated)	5.00

School of Chemistry:

Annual incidental fee.....	\$ 55.00
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College of Education:

Annual incidental fee, resident.....	\$ 30.00
Annual incidental fee, non-resident.....	60.00

The Graduate School:

The fees are the same as for the college in which the student takes his major work. If minors be chosen in colleges where the tuition fees are larger, the student shall pay in addition the exact pro-rata fee of that college.

Special Incidental Fees

Wives of members of the Faculty and persons employed by the University, \$1.00 per credit hour.

A student in one college taking a course in another shall pay in addition the fees of that college pro-rated in the proportion of credit hours taken to the full number of credit hours required.

Students carrying less than one-half of the regular schedule of work may pay fees on a credit-hour basis. The following table indicates the charge for each college, also the minimum amount that may be paid by any student.

COLLEGE	Credit Hour Fee	Minimum Total
Science, Literature, and the Arts.....	\$2.00	\$ 5.00
Engineering.....	2.50	10.00
Agriculture.....	2.00	5.00
Law.....	5.00	10.00
Medicine.....	.....	10.00
Dentistry.....	.....	10.00
Pharmacy.....	.....	10.00
Mines.....	2.00	10.00
Chemistry.....	3.00	10.00
Education.....	2.00	5.00

Graduate School.—See statement under *Incidental Fees*, page 89.

LIVING EXPENSES

With the exception of Sanford Hall, which is open to a limited number of woman students, the University of Minnesota has no dormitory systems, and all students are thrown upon their own responsibility in obtaining boarding and rooming places. (For an account of Sanford Hall, see page 67).

The expense of living at the University varies greatly according to individual habits and tastes. In general the scale of expenses is below rather than above that of similar institutions in the middle west and is considerably lower than that of most institutions situated in the eastern states.

During the past year the University has made a thorough canvas of all students to find out what they are paying for room and board and other expenses. The total expenses for the academic year, including tuition and other fees, were found to range from less than \$250 to over \$850. There were 34 students who reported their expenses as less than \$250; 38 who spent from \$250 to \$300; and 113 who spent from \$300 to \$350. The average expenses for Science, Literature, and Arts students, without counting tuition, were about \$440.

Many students earn considerable sums in outside work during both the University year and the summer vacation, and some earn their entire college expenses in this way. Forty-eight per cent of the men and 12 per cent of the women did outside work during the college year, and their average earnings were \$161.16 for men, and \$99.14 for women. There were 223 men who earned over \$200 during the college year. As for the summer vacation, 85 per cent of the men and 16 per cent of the women earn something toward their University expenses. The average summer earnings of the men were \$161, and of the women, \$68. It is therefore a fairly common occurrence for a man to earn at least \$300 towards a total expense of say \$400.

The price of board ranges from three dollars per week to six dollars. The average amount paid during the year 1912-13 was \$3.93, but excellent board may be procured for \$3.50.

Furnished rooms vary in price from \$6.00 to \$18.00 per month. Two students rooming together would of course reduce this expense. The average amount paid for room rent in 1912 was \$1.64 a week, or a little over \$7.00 a month. Thirty-four per cent of the students paid less than \$6.50, and 14 per cent paid less than \$5.50 a month.

New students will find that they will be more likely to secure comfortable rooms and suitable board if they will consult the general secretary of either the Young Men's or Young Women's Christian Association immediately upon arrival at the University, or if they will correspond with these officers before coming to the University.

The student who learns some trade before coming to the University has a great advantage over the student who has to earn his money by ordinary manual labor. Many students who have earned their whole expenses while attending the University, have made good records at the same time. Others have done so much work that they have not been able to keep up their studies, and have thus missed the one thing for which they were attending the University.

If it is possible for the student to have part of his expenses paid, he should not attempt to earn his way entirely by his own exertions. It is a comparatively easy thing for a young man to earn a part of his living while attending the University and yet do good work in his classes. Students who want work seldom fail to find it. In coming to the University, the student should bring enough money with him so that he can live comfortably for a few weeks until he can find something to do.

Students who desire advice and assistance in securing a position to help pay their expenses should confer with the Secretary of the Y. M. C. A. at the University.

DEGREES GRANTED IN 1912

TOTAL—629

THE COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

BACHELORS OF ARTS—214

Nellie Marie E. Allen, Red Wing	Borghild Margarethe Dahl, Minneapolis
Georgiana Ames, Minneapolis	Grace Orpha Davis, Minneapolis
Mark Henry Amundson, Alexandria	Marie Beatrice Denneen, New Richmond, Wis.
Alice Evangeline Anderson, Minneapolis	Arthur Cummings Dennis, Minneapolis
Carolyn Anderson, Smith Mill	Fayette C. Doherty, Tracy
Curtis Waller Appleby, Minneapolis	Zoe Donaldson, Minneapolis
Marjorie Robinson Babcock, Winnipeg, Manitoba	Blanche Elinor Door, Mankato
Earle Conklin Bailie, Minneapolis	Lester Arthur Door, Mankato
Edna E. Baird, Graceville	Augustus S. Dowdall, Jr., Minneapolis
Marty Beatrice Barber, Minneapolis	Harold L. Downing, Minneapolis
Irma Alice Beehler, Minneapolis	Alice FitzGerald Drechsler, St. Paul
David Emanuel Berg, Minneapolis	Alpha Jane Dunlap, Mandan, N. D.
Frank Leon Bibb, Minneapolis	Mary Agnes Dwyer, Minneapolis
Margaret Katherine Bingenheimer, Mandan, N. D.	Harriet Edgerly, Ellendale, N. D.
Milda Augusta Bjeldanes, Madison	John Kelly Egan, St. Paul
Theodore Blegen, Minneapolis	Hazel Belle Emerson, Minneapolis
Beda Spence Boardman, Minneapolis	Eloise Clara Engle, Minneapolis
Donna Bonniwell, Minneapolis	Victor Leonard Erickson, Minneapolis
Homer Wiltzie Borst, Minneapolis	Carolyn Lucile Everts, Minneapolis
Elizabeth Clementine Bowman, Minneapolis	John Henry Fabian, Campbell
Alice Irene Branham, Minneapolis	Albert Leonard Faegre, Minneapolis
Bertha Marie Julia Brechet, Minneapolis	Anna Marie Filk, Biscay
Genevieve Rose Breen, Minneapolis	Helena Fitzsimmons, Minneapolis
Frances Mary Brossard, Farmington	Geraldine Foster Fleming, Brainerd
Caroline Olive Brown, Minneapolis	Minnie Marie Forrer, Minneapolis
Vesta Rachel Brown, Minneapolis	Llewellyn H. Francis, Creswell, Ore.
Catherine Frances Buckley, Farmington	W. Marc Frazer, Lyle
Margaret F. Burns, Graceville	Neda Belle Freeman, Minneapolis
Mary Louise Burns, St. Paul	Theodore Wilson Freeman, Minneapolis
Leila Marie Bush, Dover	Leonard Herman Frisch, Minneapolis
Gertrude Elsie Cammack, St. Paul	George Hawthorne Gamble, Rochester
Edna May Carr, St. Paul	Grace Ganssle, Minneapolis
Edith Grace Cater, St. Cloud	Stanley Sloane Gillam, Windom
Hallie Chalfant, Chicago, Ill.	Della Florence Gould, Glencoe
George Gilman Chapin, St. Paul	Elsie Haviland Griffin, Brooklyn, N. Y.
Alice Naunerle Chilton, Howard Lake	Therese Maratta Gude, Duluth
Theodore Henry Chrischilles, Algona, Iowa	Geraldine Louise Guthrie, Blooming Prairie
Lydia Bertha Christ, Minneapolis	Ann Elora Guy, Minneapolis
Florence Adelaide Cirkel, Minneapolis	John Jacob Hadler, Ada
Ralph Elting Clifford, Minneapolis	Mary Grace Harroun, Minneapolis
Laura May Colgrove, Minneapolis	Laura Josephine Hartman, Minneapolis
Elsie Minnie Collins, Crookston	Laura Brayton Harwood, Minneapolis
Harrison Collins, Minneapolis	Ellen Mills Hastings, Elk River
John R. Connelly, Savage	Nina Sophia Haugen, Pelican Rapids
Josephine Scott Crary, Minneapolis	Charles A. Heilig, Milaca
Edith Current, New Ulm	Gale Pillsbury Hilyer, Washington, D. C.
	Ragnhild Jutta Hobe, Bald Eagle Lake

- Cora Bertine Holden, Minneapolis
 Alma Holzschuh, Minneapolis
 Robert Wilton Hotchkiss, Minneapolis
 Hester Belle Hugunin, St. Paul
 Emmajean Hutchinson, Faribault
 Albert S. Jacobson, Jewell, Iowa
 Ingwold G. Jesness, Fosston
 Helen Eugenia Jewett, Fergus Falls
 Anne Marie Johnson, Minneapolis
 Gladys Jones, Cedar Falls, Iowa
 Carl Talmage Kiplinger, Freeport, Ill.
 Gratia Rosalia Kjerland, Minneapolis
 Rubina Kneebone, Chisholm
 Frances Lamb, Moorhead
 Eva Elda Lane, Minneapolis
 Hattie Lucilla Larson, Minneapolis
 Nettie Larson, Minneapolis
 Faith Leonard, Minneapolis
 Frank Perry Leonard, Minneapolis
 Gladys Leonard, Minneapolis
 Torger August Lillehei, Minneapolis
 Zelma Mathilda Lindem, Herman
 Hildur Therese Linton, Minneapolis
 Josephine Theresa Littel, Minneapolis
 Nellie Marie Loberg, Minneapolis
 Lois Dorothy Loyhed, Faribault
 Marion Ellison Lyon, Minneapolis
 Alan Johnston McBean, Minneapolis
 Marion Stirling MacCallum, Minneapolis
 Anna Kathleen McCawley, Stillwater
 Hazel McCulloch, Washburn, N. D.
 Nora Holman MacEwen, St. Paul
 William James McHale, Preston
 Lynnfird Lucy McMahon, Fergus Falls
 Rita Dallas MacMullan, Minneapolis
 Solveig Magdalene Magelssen, Minneapolis
 Laura Lynne Major, Minneapolis
 Edna A. Marks, Minneapolis
 Adelaide E. Mason, Minneapolis
 Pearl Matteson, Summit, S. D.
 L. C. Irma Meili, St. Paul
 Guy Clifton Menefee, Albert Lea
 Eva Sarah Miller, Long Prairie
 Borghild Hoff Moe, Duluth
 Willard Alden Morse, Minneapolis
 Ora A. Neely, Bemidji
 Marie Christ Nehls, Minneapolis
 Eleanor Vivian Nelson, Dawson
 Bertha Irene Ney, Waukon, Iowa
 Flora Alice Nichols, Minneapolis
 Kathleen Nicholson, Minneapolis
 Beatrice Julia Northey, Minneapolis
 Laura Aurora Oberg, Minneapolis
 Julia Irene O'Brien, Brainerd
 Corinne V. Odell, Minneapolis
 Florence Gertrude Olson, St. Paul
 Ralph Chester Ostergren, Gladstone
 Nina Louise Parsons, St. Paul
 Walter Harold Paulsen, Minneapolis
 Amy Rhoda Alice Pellatt, Minneapolis
 Bernice Pendergast, Bemidji
 Laura Muller-Petersen, Minneapolis
 Harry Theodore Peterson, Mora
 Mellie Ray Phillips, Minneapolis
 Robert Louis Piemeisel, Jordan
 Teckla Pierson, Minneapolis
 Winnaretta Alvorithe Plummer, Minneapolis
 Harry Winn Powers, St. Paul
 Ethel Prisk, Ely
 Otto Ramstad, Thief River Falls
 Philip Lacey Ray, Minneapolis
 Mary Katharine Reely, Minneapolis
 Helen Lola Rogers, Faribault
 Emil Rude, Pelican Rapids
 Jean Russell, Minneapolis
 Clara Medora Ryan, Freeport, Ill.
 Stanley Israel Rypins, St. Paul
 George Toki Sawanobori, Yamanashi, Japan
 Eldreth Lloyd Sawyer, Minneapolis
 Florence Romaine Saxton, Minneapolis
 Wilhelmina Dorothy Schons, St. Paul
 Mary Frances Schroeder, Perham
 Helen Loretta Scully, Stillwater
 Lester Merriam Sears, Minneapolis
 Beatrice Sefton, Ellendale, N. D.
 Charles David Simpson, Minneapolis
 Gregg M. Sinclair, Minneapolis
 Verna Mabelle Slade, Minneapolis
 Louise Wilhelmine Sommermeyer, Minneapolis
 Marjorie Genevieve Spaulding, Minneapolis
 Sidney Stadsfold, Fosston
 Russell Henry Stafford, Minneapolis
 Alice Mabel Staples, St. Paul
 Elizabeth Starr, Excelsior
 Grace Stellwagen, Minneapolis
 Martha O'Neil Stemm, Oakland, Cal.
 *Ralph Sumner Stokes, St. Paul
 Louise Maudsley Sumner, St. Paul
 Harris Raymond Sutton, Prior Lake
 Florence M. Terry, Minneapolis
 Edith Belle Thompson, Houston
 Margaret Mary Thomson, Minneapolis
 Dagna Jeanette Tollefson, Rochester
 Edith Mae Trezona, Ely
 Katherine Anna Tschida, St. Paul
 Myrtle Turnquist, Minneapolis
 Theodore Utne, Dalton
 Christopher Lauritz Vaaler, Spring Grove
 Alice Vander Hiden, St. Paul
 Catherine Vaughan, Minneapolis
 Percival William Viesselman, Minneapolis

Raymond Oscar Weiss, Minneapolis
 Nellie Lavina Welch, St. Paul
 Leslie Howard Wellman, Monona, Iowa
 Elizabeth Claire West, Minneapolis
 Walter Mott West, Minneapolis

Henrietta Myrl Wheeler, St. Paul
 Harry Wilk, Virginia
 Tillie Will, Minneapolis
 Florence Matilda Wright, St. Cloud
 George Stephen Wyckoff, Worthington

BACHELORS OF SCIENCE—21

N. Philip Anderson, St. Paul
 Alva Alonzo Conley, Cannon Falls
 Albert D. Corniea, Plato
 Karl Dedolph, St. Paul
 George Francis Ghostley, International Falls
 John Alfred Halgren, Waseca
 Hugo John August Julius Hartig, Minneapolis
 Gilbert Hendrickson, Christine, N. D.
 Hermina Hermansen, Fergus Falls
 Gilbert Kvitrud, Minneapolis

Richard Ormond Leavenworth, Minneapolis
 Joseph Clement Michael, Jordan
 Clifford Morell, Verndale
 Thomas Myers, St. Paul
 Katherine Ann Nye, Minneapolis
 Reuben Martin Rosenwald, Plato
 Olof Ivar Ambrose Sohlberg, St. Paul
 Saul Soloway, Minneapolis
 Harold Ward Stone, Caldwell, Idaho
 Fredrick A. Willius, St. Paul
 Floyd Owen Woodward, Minneapolis

THE COLLEGE OF ENGINEERING AND THE MECHANIC ARTS

CIVIL ENGINEERS—5

John Walker Adams, Jr., St. Paul
 Thomas Henry Curtis, Fairmont

August Leroy Flygare, Winthrop
 Raleigh William Hosfield, Faribault

Robert William West, Rochester

ELECTRICAL ENGINEERS—6

Arthur R. Anderson, Willmar
 Earl McMaster Bill, Minneapolis
 Albert Pellet Dorrance, St. Paul

Leland Ernest Purves, Eyota
 Harry C. Streich, Winona
 Charles Nelson Young, St. Paul

MECHANICAL ENGINEERS—5

Leonard Frank Boyce, Minneapolis
 William Penn Brown, Minneapolis

Frank Johnson, Minneapolis
 James Cox Prince Markoe, St. Paul

Herbert Leslie Thompson, Hokah

BACHELORS OF SCIENCE—*In Engineering*—51

Harvey B. Anderson, Hopkins
 Samuel Lee Avis, Minneapolis
 William Henry Bailey, Minneapolis
 Claude Francis Benham, Bald Eagle Lake
 William Joseph Bingen, Minneapolis
 William Edwards Brewster, Minneapolis
 Harold S. Chapin, St. Paul
 William Gibson Clark, Stillwater
 Eugene Chadwick Crane, Minneapolis
 Allen Seymour Crawford, Rochester
 Elmer F. Cummings, Beaver Creek
 H. Arno Daum, Albert Lea
 Grover Willard Dimond, Minneapolis
 Arthur Thurston Dinsmore, Minneapolis
 Frank Arthur Donaldson, St. Paul
 Marcus O. Giertsen, Minneapolis

Edward Louis Haberle, Minneapolis
 Ernest Axel Hedenstrom, St. Paul
 Raymond Herrmann, Henderson
 Charles Kirk Hillman, St. Paul
 Clark W. Hirlleman, Minneapolis
 Frederick Wilhelm Hoorn, Red Wing
 Conrad D. Hovden, Perley
 Charles Robert Darwin Jorgens, Minneapolis
 Raymond John Kapphahn, Minneapolis
 Lester Howard Knapp, Big Lake
 Forest Volney King, Redwood Falls
 Joseph J. Kriz, Hopkins
 Robert Carl Mathes, Minneapolis
 Elmer William Merriell, Minneapolis
 Martin Augustine Mikesch, Minneapolis

Harold Sylvanus Morton, Minneapolis
 George Arthur Nelson, Anoka
 Clarence C. Pagenhart, Rochester
 Charles Albert Pardee, Minneapolis
 Raymond Albert Pease, Minneapolis
 Barney Julius Peterson, Alvarado
 Lars Rand, Minneapolis
 Ivan George Ringstrom, Wheaton
 Albert Emil Ruemmele, Hudson, Wis.
 Loiel S. Ryan, Little Falls

Willard A. South, Minneapolis
 Morton Edwin Souther, Minneapolis
 Hjalmer Seymour Swenson, Willmar
 Theodore Miner Swenson, St. Paul
 Albert Lauris Thuras, Minneapolis
 Irving Eugene Torgerson, Lanesboro
 Neal Crandall Towle, Minneapolis
 Oscar Henry Wangaard, Minneapolis
 Arthur Gustaf Welin, Argyle
 Henry Ernest Wolff, St. Paul

*BACHELOR OF SCIENCE—1

Paul Arthur Johnson, Minneapolis

THE COLLEGE OF AGRICULTURE

BACHELORS OF SCIENCE—*In Agriculture*—8

William Farnsworth Hagerman, Morris
 John Husby, McIntosh
 Oscar Bernard Jesness, Fosston
 F. Roy Johnson, Casselton, N. D.

Andrew Julius Olson, Renville
 Frank W. Peck, St. Paul
 Paul Eugene Sturges, Buffalo
 Henry S. Werner, Fulda

BACHELORS OF SCIENCE—*In Home Economics*—15

Emma Tilton Adams, Owatonna
 Emir Best, Minneapolis
 Elizabeth Florence Brooks, St. Paul
 Ava I. Collier, Minneapolis
 Mercedes Ruth Cornish, Vernon Center
 Jean Cosette Drew, Minneapolis
 Grace Agnes Gray, River Falls, Wis.
 Rachel Hopkins, Minneapolis

Elvira Constance Larson, Minneapolis
 Marguerite F. McIntosh, St. Paul
 Agnes Morton, Elmwood, Ill.
 Martha Johanna Mueller, St. Paul
 Catherine Anna Ober, Minneapolis
 Katherine Genevieve Thompson, Minneapolis
 Ruth Jewett Williams, St. Louis Park

THE COLLEGE OF FORESTRY

BACHELORS OF SCIENCE—*In Forestry*—13

Walter Frederic Beyer, St. Paul
 Harvey Presbury Blodgett, St. Paul
 William Raymond Clymer, St. Paul
 Grover M. Conzet, Nevis
 S. Grant Harris, Jr., St. Paul
 Arthur Wesley Hodgman, St. Paul

Sigvald Norman, Ortonville
 John Eliot Orr, Michigan City, Ind.
 William Rowe Pearce, St. Louis Park
 Heman Nelson Pettibone, Chicago, Ill.
 Fred E. Spellerberg, Dubuque, Iowa
 John Albert Stevenson, Minneapolis

Robert Wilson, Stillwater

THE LAW SCHOOL

BACHELORS OF LAWS—55

Charles L. Ainsworth, Chippewa Falls, Wis.
 Rollin Garard Andrews, B. S., Minneapolis

Ellis Louverne Ballou, Minneapolis
 Arthur Randall Barke, B. A., Fergus Falls
 John Cabot Benson, Heron Lake

*This degree is granted in this special case for the completion of the course in Science and Technology no longer offered.

Eugene Sharp Bibb, Minneapolis
 Casimir Francis Bielejewski, Minneapolis
 Virginia B. Blythe, Minneapolis
 Kenneth S. Cant, Duluth
 Joseph Douglas Carroll, Miller, S. D.
 Harry Christopher, Minneapolis
 Alden Worcester Elwell, Minneapolis
 Leonard Thorfin Erdall, Minneapolis
 John Robert Foley, Barry
 James Martin Ford, Minneapolis
 Leonard Frank, St. Paul
 Otto Arthur Gerth, Minneapolis
 John Joseph Greene, Fayette, Iowa
 Charles Leo Hayes, St. Paul
 Russell Albert Helgeson, Herman
 Clarence W. Higgins, Minneapolis
 Charles Lilly Horn, Minneapolis
 Donald Grant Hughes, Minneapolis
 Raymond Mark Hughes, Aitkin
 Frank Edward Johnson, Bird Island
 Lisle Alexander Johnston, St. James
 John Patrick Kain, B. S., Breckenridge
 Otto Von Bismark Kotz, Minneapolis
 Albert James Lobb, Ripon, Wis.
 Fred Sheffield McCargar, Montevideo

Arthur Donald Young, Eugene, Ore.

Dennis Francis McGrath, Jr., Owatonna
 Donald Alexander McGregor, Minneapolis
 Arthur Ludvig Markve, B. A., Minneapolis
 Frederick Joseph Miller, St. Paul
 Gunnar Hans Nordbye, Granite Falls
 Ezra Nathaniel Oberg, Minneapolis
 Matthias Nordberg Olson, B. A., Belview
 Waldemar Gustave Pearson, Minneapolis
 Harry Herbert Peterson, St. Paul
 Earle Thomas Pickering, Geneva
 George Webster Plank, Minneapolis
 Edgar Benjamin Rehnke, B. A., Kenyon
 Carl Henry Schuster, Rochester
 De Forrest Jeremiah Sias, Jr., Madison
 William Yale Smiley, B. A., Minneapolis
 Amos Delbert Smith, Slayton
 Lucius Alexander Smith, Faribault
 Louis C. Stevens, Hanley Falls
 Philip Mills Stone, Morris
 William Reynolds Suffel, Duluth
 Ralph W. Swagler, St. Peter
 Frederick Edwin Tydeman, Montevideo
 Murray Waters, Minneapolis
 Chester Sawyer Wilson, B. A., Stillwater

THE MEDICAL SCHOOL

DOCTORS OF MEDICINE—37

Albert Edwin Amundsen, St. Paul
 Willard Remington Baker, B. A., Leavenworth, Kansas
 Elizabeth Margaret Barnard, Neligh, Neb.
 Ross Danforth Benson, B. S., Toledo, Iowa
 Otto Bergan, B. S., Everett, Wash.
 Paul Dee Berrisford, St. Paul
 Arthur Ferdinand Bratrud, St. Paul
 Richard Bye, B. A., Lily, S. D.
 William C. Carroll, B. S., St. Paul
 Theodore Hubert Dedolph, St. Paul
 Jesse Ellsworth Douglass, B. S., Blue Earth
 Charles Bigelow Drake, B. A., St. Paul
 Gustav Adolf Eisengraeber, Granite Falls
 Harry Floyd Emert, B. S., Lockport, N. Y.
 Andrew O. Flom, B. S., Minneapolis
 Edwin Leslie Gardner, B. S., Minneapolis
 Ralph L. Kirsch, B. S., Crookston
 Olaf Kittleson, B. S., Zumbrota
 Harry Klein, B. S., Duluth

James Zimmerman, B. A., Vandalia, Ill.
 Ralph Thomas Knight, B. A., Minneapolis
 Frank John Lawler, Minneapolis
 William H. Long, Elysian
 Henry E. Michelson, B. S., Bismark, N. D.
 Harry Richard Nordley, Minneapolis
 Adolph August Passer, B. A., New Paynesville
 Thomas Albert Peppard, B. S., Minneapolis
 Lee W. Pollock, B. S., Rochester
 Thomas P. Rothnem, Minneapolis
 Otto John Seifert, B. S., New Ulm
 George William Snyder, B. S., St. Paul
 Victor Cecil Thompson, Preston
 Ohmer H. Warner, St. Paul
 Frank Elmer Weed, Conway, N. D.
 Raymond Wright Whittier, B. S., Minneapolis
 Paul White Wilson, B. S., Los Angeles, Cal.
 Warner Gleason Workman, Tracy

GRADUATES IN NURSING—8

Margaret Maria Ames, Hutchinson
 Marv Elsie Mark, Osage, Iowa

Mary Margaret Marvin, Zumbrota
 Olga Beatha Skonnord, Minneapolis

The following students have completed their theoretical work and upon completion of their term of service in September will receive their diplomas:

Elizabeth Claire Burns, Graceville
Christenia Adelaide Madsen, Minneapolis

Mary Carolyn Schwarg, Dodge Center
Lena Belle Stewart, Minneapolis

THE COLLEGE OF DENTISTRY

DOCTORS OF DENTAL SURGERY—62

Gust E. Abrahamson, Motley
Louie T. Austin, Madelia
John P. Bonner, Virginia
Robert Joseph Bowe, Waseca
Ernest Julius Brosius, Minneapolis
Lowell Hanphen Carlson, Litchfield
William Herman Crone, Minneapolis
Leo Parker Ganfield, St. Paul
Samuel Gross, Minneapolis
Ernest Robert Gylenskog, Two Harbors
Kenjiro Hori, Hackman, Ohmi, Japan
Frank Philip Hosterman, Pelican Rapids
Burnett Theodore Johnson, Rose Creek
Ernest Samuel Johnson, Waseca
George Edwald Johnson, Minneapolis
Henry Johnston, Franklin
Arthur John Kelly, Houston
Bert Hunter Kerr, Huron, S. D.
Sylvester Koontz, Albert Lea
George M. Krough, Minneapolis
Roy Calvin Lang, Glenville
Gustave Edward Larson, St. Peter
Frank Jacob Lenz, Eau Claire, Wis.
Harold Judson Leonard, Minneapolis
Alfred Clarence Lier, Minneapolis
Thomas Earl McLean, Devils Lake, N. D.
Benjamin Leo Edward Maertz, New Prague
Robert Lincoln Matthews, Mankato
Thomas J. Mee, St. Paul
William Edward Mentzer, Duluth
William Carl Naegeli, St. Cloud

Arthur F. Nellerroe, Sacred Heart
Anton Nelson, Cloquet
Nels Bernard Nelson, Evansville
James N. Nesse, Mabel
James Watson Nixon, Wells
Mark Lewis Norman, Minneapolis
William Herman Ohm, Elba
Carl C. Olsen, Jackson
Elvin Christian Olson, Renville
John Howard Onstad, Wahpeton, N. D.
Arthur B. Ostrander, Minneapolis
Enoch Peterson, Otisco
Harold A. Peterson, Litchfield
Arthur J. Quesnell, Clarkfield
Benjamin Sidney Rauch, Minneapolis
George Hamilton Record, Minneapolis
Otis Hoyt Reynolds, Minneapolis
Kenneth Leroy Rice, Adrain
Robert Edward Richardson, Bemidji
Hugh W. Ritchie, Cannon Falls
Henry Ralph Richter, Montgomery
Gustav Adolph Roelke, Loretto
George Henry Rowell, North Branch
Wilhelm Frimann Undall Saethre, Bergen, Norway
Thorwald C. Selvig, Rushford
Alfred Wilhelm Simonson, Minneapolis
Kenneth Vernon Smith, Montevideo
Finn Solberg, Christiania, Norway
Abe Arnold Steinfeldt, Minneapolis
Theodore Swendsen, Minneapolis
Edward Gustave J. Wolf, Minneapolis

THE COLLEGE OF PHARMACY

BACHELORS OF PHARMACY—12

Samuel Baer Barnett, St. Paul
Hjalmar Thorwald Hanson, Eau Claire, Wis.
Alice Mercedes Holverson, Alexandria
Stuart Richard Hughes, Minneapolis
Frederick G. Kusterman, St. Cloud

George Allen Larson, Atwater
Alfred W. Olson, Argyle
Cusack M. Riley, Waukon, Iowa
Leo Lawrence Schaffer, Delano
Wesley Anton Scheer, Howard Lake
Orin L. Swenson, Lamberton

Henry R. Witter, Park Rapids

THE SCHOOL OF MINES

ENGINEERS OF MINES—23

Guy Norman Bjorge, Duluth	Lynn Ulmer Martin, Grand Meadow
Edward Dean Coventry, Duluth	John Charles O'Brien, St. Paul
Robert Henry Dickson, Minneapolis	Walter Samuel Olson, St. Paul
Leonard Julius Hagstrom, Minneapolis	Joseph Bowman Perry, Minneapolis
George Leavitt Harrington, Minneapolis	Roswell Woodworth Prouty, St. Paul
Ezra Alpha Hewitt, Minneapolis	Max F. Quinn, Spokane, Wash.
La Fayette Knox, St. Paul	Howard Elmore Stevens, Stillwater
Edward G. Kremer, Grand Rapids	William L. Taylor, Dundas
John Lea, Zumbrota	Albin F. Victor, Linstrom
John Whitney Lewis, Minneapolis	Arthur Wallinder, West Duluth
Howard Russell McAdams, Minneapolis	Rollie Bradner Walter, Delano
Clark Nicoll Woodis, Amboy	

THE SCHOOL OF CHEMISTRY

CHEMICAL ENGINEERS—2

Herbert Edward Conrad Brunkow, Delano	Edmund William Herman Martin, Winona
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BACHELORS OF SCIENCE—3

Junius David Edwards, Minneapolis	Milton M. Goldstein, Minneapolis
John Rippey Harshaw, Minneapolis	

In Chemistry—13

Paul Henry Mallet-Prevost Brinton, Philadelphia, Pa.	Charles Oscar Nesse, Mabel
Elmer Anson Daniels, Minneapolis	Guy George Parkin, Pine Island
Henry Joseph Hoffmann, St. Paul	Rhea Benedict Robinson, B. A., Minneapolis
Lucian Karatz, Minneapolis	Ralph H. Rockwood, Minneapolis
John Roderick McLeod, Minneapolis	George Hermann Schmidt, New Ulm
Ralph Wallace Mitchell, Minneapolis	David Oscar Priestersbach, St. Paul
Lynn Allison Wanless, Minneapolis	

THE COLLEGE OF EDUCATION

BACHELORS OF ARTS—*In Education—41*

Edna Viola Anderson, St. Paul	Floy K. Hamilton, Minneapolis
Elma Ruth Anderson, Minneapolis	Ruth Jessup, Minneapolis
Marjorie Armstrong, Duluth	Monica Mary McElroy, Minneapolis
Herman Nordahl Bergh, Hendrum	Dorothea Elizabeth Mason, Somerset, Wis.
Maybelle Antoinette Bergh, St. Paul	Margaret Edna Morrison, Excelsior
Elizabeth Bulkley Braden, Minneapolis	Rose Mary Muckley, Minneapolis
Truma Frances Brockway, Minneapolis	Adelya M. Nelson, Center City
Eunice Helene Brotherton, Duluth	Anna Edith Nelson, Grantsburg, Wis.
Susan Almira Covell, Alexandria	Ebba Marie Norman, Minneapolis
Margaret Gertrude Davis, Minneapolis	Mabel Josephine Norman, Ortonville
Louise Dedolph, St. Paul	Vivian Holmes Norwood, Minneapolis
Stella Annette Eustis, Owatonna	Grace L. O'Neil, Minneapolis
Eudell Everdell, Minneapolis	Mary Gertrude O'Neill, Grand Forks, N. D.
Florence Marion Francis, Minneapolis	Oswald B. Overn, Albert Lea
Emilie Louise Geyman, Minneapolis	Eunice B. Owen, Minneapolis
Grace Caroline Geyman, Minneapolis	Mary Jessie Palmer, Minneapolis
Rosetta Petrine Groettum, Minneapolis	
Gertrude Bernard Hall, Minneapolis	

Janet Ruth Rankin, Minneapolis
 Marie Madeline Shelley, Minneapolis
 Ethel M. Smith, Minneapolis

Ruth Genevieve Sorenson, Minneapolis
 Nellie Wheelock, Minneapolis
 Effie Mathilda Wicklund, Bingham Lake

Edna Ruth Winter, Faribault

THE GRADUATE SCHOOL

MASTERS OF ARTS—22

Doris Lilian Brown, Minneapolis
 B.A. '11, Minnesota
 Major, Mathematics; Minors, Astronomy, Philosophy
 Thesis, Infinite Products

Louise Hedwig Bruhn, Minneapolis
 B.A. '09, Minnesota
 Major, German; Minors, English, Philology
 Thesis, Contrast as a Dramatic Principle in Schiller's Dramas

Arthur C. Burkhard, Preston
 B.A. '11, Minnesota
 Major, German; Minors, Philology, English
 Thesis, The Sources of Schiller's *Die Räuber*

Carl Graham Campbell, Burkeville, Vt.
 B.A. '07, Minnesota
 Major, Education; Minor, Agriculture
 Thesis, The Introduction of Agriculture into the High School

Walter Maurice Crawford, Kasson
 Ph.B. '03, Hamline
 Major, Psychology; Minors, Education, Philosophy
 Thesis, Reaction Times to the Cessation of Stimuli

Nevada Sutherland Evans, Minneapolis
 B.A. '10, Minnesota
 Major, Plant Pathology; Minors, Mycology, Entomology
 Thesis, Studies on the Life History of *Sclerotinia fructigena* (Persoon) Schroeter

Richard Arthur Graves, Minneapolis
 B.A. '09, Minnesota
 Major, Economics; Minors, Political Science, Education
 Thesis, The Development of Agriculture in Minnesota

Ruth Elizabeth Hermann, Minneapolis
 B.A. in Education, '11, Minnesota
 Major, Blood of Vertebrates; Minor, Industrial Botany
 Thesis, The Blood of the Garter Snake (*Eutaenia radix* and *E. sirtalis*)

D. Edward Hickey, Minneapolis
 B.A. in Education, '10, Minnesota
 Major, Education; Minor, Agriculture
 Thesis, Agriculture in our High Schools

Henry John, Minneapolis
 B.A. '11, Kansas
 Major, Mammalian Embryology; Minors, Anatomical Technique, Physical Chemistry
 Thesis, The Changes in the Mucosa and Glands of the Rodent Uterus during Pregnancy

Elta Lenart, Minneapolis
 B.A. '10, Minnesota
 Major, Rhetoric; Minors, Philosophy, English
 Thesis, Plato's Conception of Rhetoric

Marie Caroline Lyle, Minneapolis
 B.A. '11, Minnesota
 Major, English; Minors, English, Education
 Thesis, The Relation of the Lucifer Tradition in the Literary Compositions of the Middle Ages to the Story of the Fall of the Angels in the Mystery Plays

Davida McCaslin, St. Paul
 B.A. '04, Coe College; B.S. '07, James Millikin University
 Major, Rhetoric; Minor, English
 Thesis, Wordsworth's Theory of Poetic Diction

Wallace MacMurray, St. Paul
 B.A. '11, Minnesota
 Major, English; Minors, English, Sociology
 Thesis, Elements in the Composition of the Medieval Play of the Nativity and their Relation to the Final Form

Gustav S. Petterson, Battle Lake
 B.A. '11, Minnesota
 Major, Sociology; Minors, Psychology, Education
 Thesis, Some Social Possibilities of the School Curriculum

Frances H. Relf, St. Paul

B.A. in Education, '11, Minnesota

Major, History; Minor, Economics
Thesis, The Sources for the Debates
in the House of Commons during
the Session of 1629; Being Part
of the Introduction to a Critical
Edition of the *Nicholas Notes*

Clifford Griffith Schultz, Minneapolis

B.A. '11, Minnesota

Major, History; Minors, History,
Philosophy
Thesis, Commercial Relations of
the United States and Great
Britain, 1783 to 1795

Hazel Louise Wheeler Storr, St. Paul

B.A. '11, Minnesota

Major, English; Minors, Education,
Sociology
Thesis, The Subjectivity of Ibsen

Claude Winship Street, Northfield

B.S. '06, Carleton

Major, Education; Minor, Sociology

Thesis, A Plea for All-Year School

Sweyne W. Swenson, Ellsworth, Iowa

B.A. '07, Minnesota

Major, Political Science; Minors,
Economics, History
Thesis, Representation in the Min-
nesota State Legislature

Ruth Thompson, Minneapolis

B.A. '08, Ripon College

Major, History; Minor, Economics
Thesis, The Sioux Treaties at
Traverse des Sioux and Mendota
in 1851 and their Outcome

Huldah Lucile Winsted, Minneapolis

B.A. '11, Minnesota

Major, Education; Minors, Geog-
raphy, Sociology
Thesis, The Open-Air School
Movement

MASTERS OF SCIENCE—9

Basil M. Benzin, Sebastopol, Russia

B.S. in Agriculture, '10, Minnesota

Major, Plant Breeding; Minors,
Ecology, Agricultural Botany
Thesis, Drouth Resistance as a
Factor in Plant Breeding

Charles Royal Cressy, Minneapolis

B.S. in Chemistry, '08, Minnesota

Major, Research in Chemistry; Minor,
Advanced Mineralogy
Thesis, New Methods for the De-
termination of Volatile Combust-
ible Matter in Coal

Einer Johnson, Minneapolis

B.A. '10; B.S. in Chemistry, '11, Min-
nesota

Major, Hydrogen Sulphide in Illumi-
nating Gas; Minors, Paint
Analysis, Physical Chemistry
Thesis, An Apparatus and Method
for Determining Hydrogen Sul-
phide in Illuminating Gas

William H. Kenety, Fulda

B.S. in Forestry, '11, Minnesota

Major, Forest Ecology; Minors,
Physiology, Advanced Plant
Pathology
Thesis, Natural Reproduction on
the Cloquet Forest

Alfred Rudolph Kohler, St. Paul

B.S. in Agriculture, '06, Iowa State
College

Major, Plant Breeding; Minors,
Pathology, Economics

Thesis, Inheritance in Potatoes
under Asexual Reproduction

Masaji Kugimoto, Tokyo, Japan

M.S. in Agriculture, '08, Imperial
University of Tokyo

Major, Animal Nutrition; Minors,
Meat, Stock Judging
Thesis, The Relation of Food Nu-
trients to the Production of
Milk Solids

Earl Pettijohn, St. Paul

B.A. '06; B.S. '11, Minnesota

Major, Organic Chemistry; Minors,
Industrial Botany, Physical
Chemistry
Thesis, A Chemical Study of the
Fruit of the Hawthorn (*Cratae-
gus*)

Mark Joseph Thompson, Winsted

B.S. in Agriculture, '11, Minnesota

Major, Agriculture; Minors, Soils,
Botany
Thesis, Crop Production in Rela-
tion to Physical Factors

Arne G. Tolaas, St. Paul

B.S. in Agriculture, '11, Minnesota

Major, Plant Pathology; Minors,
Bacteriology, Plant Physiology
Thesis, Bacteriosis of Cultivated
Mushrooms

MASTER OF FORESTRY—1

Julius V. Hofmann, Janesville

B.S. in Forestry, '11, Minnesota

Major, Advanced Silviculture; Mi-

nors, Advanced Ecology, Taxonomy

Thesis, The Cottonwood (*Populus deltoides*); A Tree Study

DOCTORS OF PHILOSOPHY—2

Francis Cowles Frary, Minneapolis

Analytical Chemist '05, M.S. '06, Minnesota

Major, Chemistry; Minors, Electrical Engineering, Electrochemistry

Thesis, Equilibria in Systems Containing Alcohols, Salts, and Water, including a New Method of Alcohol Analysis

Charles Eugene Johnson, Minneapolis

B.A. '06; M.A. '07, Minnesota

Major, Comparative Anatomy; Minors, General Physiology, Ornithology

Thesis, The Development of the Prootic Head Somites and Eye Muscles of *Chelydra serpentina*.

CERTIFICATES, HONORS, PRIZES

Degrees with Distinction

IN ECONOMICS AND POLITICAL SCIENCE

Stanley Sloane Gillam

Percival William Viesselman

IN ENGLISH

Blanche Elinor Door
Adelaide E. Mason

Jean Russell
Martha O'Neil Stemm

IN GERMAN

Alma Holzschuh

IN GREEK

Guy Clifton Menefee

IN HISTORY

Solveig Magdalene Magelssen

Verna Mabelle Slade

IN LATIN

Marie Beatrice Denneen

Gratia Rosalia Kjerland

IN MUSIC

Frank Leon Bibb

IN SWEDISH

Victor Leonard Erickson

IN SOCIOLOGY AND ANTHROPOLOGY

Alice Evangeline Anderson

Homer Wiltsie Borst

Degrees Cum Laude

IN LAW

Matthias Nordberg Olson, B. A.

Harry Herbert Peterson

Certificates of Proficiency in Music

Mildred Lucile Borom
Ada Jenette Grinager

Grace Margaret Leck
Hazel Marie Strong

Honors in Public Speaking

Stanley Sloane Gillam

Matthias Nordberg Olson, B. A.
Theodore Utne

The Albert Howard Scholarship

Matthias Nordberg Olson, B. A.

The Shevlin Fellowships

ACADEMIC

Etheleen Frances Kemp, M. A.

AGRICULTURE

Grover M. Conzet

MEDICINE

Henry John, B. A.

The '89 Memorial Prize in History

Awarded to Verna Mabelle Slade

Honorable mention to Louise M. Sumner

The Alumni Weekly Gold Medal

Awarded to Matthias Nordberg Olson, B. A.

The William Jennings Bryan Prize

Awarded to Sweyn W. Swenson, B. A.

The Dr. J. W. Bell Prize in Physical Diagnosis

Awarded to Edwin Leslie Gardner, B. S.

The Rollin E. Cutts Prize in Surgery

Awarded to Thomas Albert Peppard, B. S.

The Andrew Lanquist Prize

Awarded to Ebba Marie Norman

Honor Graduates of the Military Department to be Reported to the Secretary of War and the Adjutant General of Minnesota

CADET COLONEL

Raymond Wright Whittier, B. S.

CADET LIEUTENANT COLONEL

Earl McMaster Bill

Rhea Benedict Robinson, B. A.

CADET MAJOR

Walter Frederic Beyer

CADET CAPTAINS

Eugene Sharp Bibb
Harvey Presbury Blodgett
George Hawthorne Gamble
Stanley Sloane Gillam

Robert William Hotchkiss
John Roderick McLeod
Charles Nelson Young
George Stephen Wyckoff

SUMMARY OF STUDENTS

1912-13

COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

	Men	Women	Total	
Senior Class.....	90	186	276	
Junior Class.....	82	216	298	
Sophomore Class.....	217	229	446	
Freshman Class.....	284	260	544	
Unclassed Students.....	14	34	48	
	687	925	1612	1612

COLLEGE OF ENGINEERING AND THE MECHANIC ARTS

	Men	Women	Total	
Post-Senior Class—				
Civil.....	20	..	20	
Electrical.....	12	..	12	
Mechanical.....	9	..	9	
	41	..	41	
Senior Class—				
Civil.....	19	..	19	
Electrical.....	18	..	18	
Mechanical.....	7	..	7	
	44	..	44	
Junior Class—				
Civil.....	28	..	28	
Electrical.....	34	..	34	
Mechanical.....	11	..	11	
	73	..	73	
Sophomore Class—				
Civil.....	26	..	26	
Electrical.....	26	..	26	
Mechanical.....	25	..	25	
	77	..	77	
Freshman Class—				
Architectural.....	12	..	12	
Civil.....	39	..	39	
Electrical.....	33	..	33	
Mechanical.....	18	..	18	
Undecided.....	31	..	31	
	133	..	133	
Irregular.....	25	..	25	
	393	..	393	393

THE DEPARTMENT OF AGRICULTURE

	Men	Women	Total
College of Agriculture—			
Graduate Students.....	11	..	11
Special Students.....	10	7	17
	21	7	28

	Men	Women	Total	
Agricultural Course—				
Senior Class.....	22	..	22	
Junior Class.....	33	..	33	
Sophomore Class.....	49	..	49	
Freshman Class.....	70	..	70	
	<hr/>	<hr/>	<hr/>	
	174	..	174	
Forestry Course—				
Senior Class.....	14	..	14	
Junior Class.....	13	..	13	
Sophomore Class.....	7	..	7	
Freshman Class.....	13	..	13	
	<hr/>	<hr/>	<hr/>	
	47	..	47	
Home Economics Course—				
Senior Class.....	..	18	18	
Junior Class.....	..	23	23	
Sophomore Class.....	..	51	51	
Freshman Class.....	..	86	86	
	<hr/>	<hr/>	<hr/>	
	..	178	178	
College Summer School—				
Total registration.....	28	64	92	
Duplicates registered 1912-13.....	5	12	17	
	<hr/>	<hr/>	<hr/>	
Net registration.....	23	52	75	
	<hr/>	<hr/>	<hr/>	
	265	237	502	502
The School of Agriculture—				
Intermediate Class.....	13	4	17	
Senior Class.....	140	69	209	
Junior Class.....	164	83	247	
Freshman Class.....	294	131	425	
	<hr/>	<hr/>	<hr/>	
	611	287	898	898
Dairy School.....				
Farmers' Short Course.....	129	5	134	
Junior Short Course.....	244	84	328	
Traction Engineering Course.....	37	..	37	
Teachers' Training School.....	69	784	853	
	<hr/>	<hr/>	<hr/>	
	582	873	1455	1455
School of Agriculture, Crookston.....				
Farmers' Short Course, Crookston.....	111	25	136	
Junior Short Course, Crookston.....	112	16	128	
Teachers' Training School, Crookston.....	36	11	47	
School of Agriculture, Morris.....	15	210	225	
Farmers' Short Course, Morris.....	78	51	129	
Junior Short Course, Morris.....	87	..	87	
Teachers' Training School, Morris.....	74	71	145	
	<hr/>	<hr/>	<hr/>	
	518	503	1021	1021
	<hr/>	<hr/>	<hr/>	
	1976	1900	3876	3876

LAW SCHOOL

Regular Law

	Men	Women	Total
Third-Year Day.....	56	2	58
Second-Year Day.....	29	1	30
First-Year Day.....	27	..	27
First-Year Day (Academic Seniors).....	27	1	28
Fourth-Year Night.....	8	..	8
Third-Year Night.....	13	2	15
	160	6	166

Special Law

	Men	Women	Total	
Third-Year Day.....	8	..	8	
Second-Year Day.....	9	..	9	
First-Year Day.....	27	..	27	
Third- and Fourth-Year Night.....	4	..	4	
	48	..	48	
	208	6	214	214

MEDICAL SCHOOL

	Men	Women	Total	
Graduate Students.....	11	1	12	
Sixth-Year Class.....	42	4	46	
Fifth-Year Class.....	32	2	34	
Fourth-Year Class.....	50	2	52	
*Third-Year Class.....	50	2	52	
	185	11	196	196
The School for Nurses—				
Third-Year Class.....	..	12	12	
Second-Year Class.....	..	4	4	
Preliminary.....	..	14	14	
	..	30	30	30

COLLEGE OF DENTISTRY

	Men	Women	Total	
Third-Year Class.....	62	..	62	
Second-Year Class.....	86	3	89	
First-Year Class.....	92	..	92	
Unclassed.....	11	..	11	
	251	3	254	254

COLLEGE OF PHARMACY

	Men	Women	Total	
Graduate Students.....	3	..	3	
Senior Class.....	32	1	33	
Junior Class.....	45	4	49	
Unclassed.....	1	..	1	
	81	5	86	86

*Second and First-Year students are listed in the College of Science, Literature, and the Arts.

SUMMARY OF STUDENTS

107

SCHOOL OF MINES

	Men	Women	Total	
Seniors.....	11	..	11	
Juniors.....	7	..	7	
Sophomores.....	19	..	19	
Freshmen.....	20	..	20	
First-Year Class.....	37	..	37	
	94	..	94	94

SCHOOL OF ANALYTICAL AND APPLIED CHEMISTRY

	Men	Women	Total	
Post-Senior Class.....	2	..	2	
Senior Class.....	16	1	17	
Junior Class.....	7	..	7	
Sophomore Class.....	11	..	11	
Freshman Class.....	57	9	66	
Unclassed.....	4	1	5	
	97	11	108	108

COLLEGE OF EDUCATION

	Men	Women	Total	
Graduate Students.....	8	..	8	
Senior Class.....	9	35	44	
Junior Class.....	8	32	40	
Unclassed.....	4	8	12	
	29	75	104	104

GRADUATE SCHOOL

Registration.....	114	69	183	183
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THE UNIVERSITY SUMMER SESSION

	Men	Women	Total	
Registration.....	204	290	494	
Duplicates registered during 1912-13.....	109	95	204	
Net Registration.....	95	195	290	290

SUMMARY OF TOTALS

	Men	Women	Total	
College of Science, Literature, and the Arts.....	687	925	1612	
College of Engineering and the Mechanic Arts...	393	..	393	
Department of Agriculture.....	1976	1900	3876	
Law School.....	208	6	214	
Medical School (including School for Nurses)....	185	41	226	
College of Dentistry.....	251	3	254	
College of Pharmacy.....	81	5	86	
School of Mines.....	94	..	94	
School of Analytical and Applied Chemistry.....	97	11	108	
College of Education.....	29	75	104	
Graduate School.....	114	69	183	
Summer Session.....	95	195	290	
	4210	3230	7440	7440
Less duplicates.....	56	2	58	58
	4154	3228	7382	7382

Extension Work—

Academic Courses (Evening).....	62	219	281	
Business Courses (Evening).....	265	40	305	
Engineering Courses (Evening).....	151	..	151	
Law Courses (Evening).....	31	..	31	
Correspondence.....	34	20	54	
	<hr/>	<hr/>	<hr/>	<hr/>
	543	279	822	822
Total registration.....	4697	3507	8204	8204
Students of collegiate grade.....	2443	1565	4008	
Students of non-collegiate grade.....	1711	1663	3374	



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